

CHAPTER II - *The Excavation and Survey*

SECTION I - ROMERO'S CAVE (Tm c 247)

This cave, which we called Romero's Cave, is located in the northeastern section of the municipio of Ocampo in the southwestern part of the state of Tamaulipas in northwestern Mexico (See map). Specifically it is on the southeast side of Canyon Flacco near its source in a small range of north-south oriented hills (about 4,000 feet elevation) called locally the Sierra Azul. Canyon Flacco, which flows southeast to northwest in front of the cave, winds around, and then enters the Canyon Infiernillo from the northwest. It, in turn, flows southwest and enters Ocampo Canyon just north of the town of San Lorenzo (See areal photograph Fig.). Ocampo Canyon in turn flows southward and is ^{part of} the Panco River drainage system.

Canyon Flacco is about 600 feet deep and its bottom varies between 50 and 250 feet wide. It is completely dry except for the occasional potholes that have rainwater in them. There is gravel, however, along the ~~arrayed~~^{eroded} edges indicating that it once had flowing water in it. The side of the canyon may be divided into four tiers. The lowest tier, extending from the bottom to as much as 200 feet, is a vertical wall of eroded limestone. This is capped by a less precipitous slope, often shrub-covered with only occasional outcrops of rock showing, which are from 100 to 300 feet high. Above this is another cliff varying from 500 to 300 feet in height of noticeably bedded limestone. The bottom of the cliff of this third tier is evidently of a softer limestone and water erosion (probably by a stream flowing through the Flacco Canyon) has gouged out a series of rock shelters and caves. One of these is Tm c 247 (See Fig.).

This stratum in turn, is capped by a gentler slope which blends into the top of the hill.

Romero's Cave Tm c 247 faces northeast looking across Flacco Canyon. It is about 15 to 20 feet above the base of the cliff of the third tier and its top is about 100 feet below the top of the cliff. There is a break in the cliff about 100 feet west of the cave and a narrow passage sloping from this break to the mouth of the cave. The cave at the mouth is about 70 feet across and has a maximum height of 80 feet. It is about 60 feet deep. However, the area that is well sheltered and covered by refuse and is smaller, being only 55 feet wide and about 50 feet deep. Here the ceiling is less than 60 feet high.

(?)

The refuse floor of the cave slopes greatly from front to back and slopes gently from east to west for about half its width, while the other half is somewhat steeper due to a talus of rocks that have fallen from the roof. The east half, because of its lack of rocks, was chosen for excavation and here the floor was fairly level. Unfortunately, local treasure seekers had dug five large holes in this floor and, of course, had destroyed valuable archaeological materials.

It was, however, this "gold digging" that brought knowledge of the cave to the attention of the archaeologists. Ignacio Guerra learned from the treasure hunters that they had unearthed "mummies" and had the presence of mind to report this to the Instituto de Antropologia y Historia in Mexico City. The institution in turn had sent Dr. A. Romero and J. Valenzuela in 1937 to investigate the cave. They published a report about their trip and the cave's skeletal

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Plate

- A. - Picture of Cliff
- (B.) - Picture of Cave.
- (C) - Interior Cave

materials, in 1950. In 1953, while preparing plans for investigating ancient subsistence patterns in Tamaulipas, I read this report and made plans to visit this cave in the course of the archaeological reconnaissance.

Near the end of the first month of our survey in Tamaulipas (December 1953), Ignacio Guerra was contacted and a trip made to the cave. An examination of the profiles of the treasure hunters' pits, as well as the ancient refuse that they had discarded, showed the cave to have archaeological potentialities. Therefore arrangements were made to undertake a major excavation which began on February 1954. Our general procedure was to move into the area with from 6 to 20 men for a two-week period for excavation and then to come out with the specimens for a rest (and bath) and to purchase supplies ^{vacation period} ~~for~~ ^{leaving on} three or four ~~days~~. Then we would go back again. Actually, five such work periods occurred and our excavation ceased in mid-April 1954. Forty-one days with an average of ten men were spent in excavating Tm c 247.

In excavation we used what might be called a vertical profile stripping technique. To proceed with this method it was necessary first to make a vertical profile at the edge of what was to be our excavation. First we cleaned out two squares north five east five, and north five east ten which had been pitted by treasure hunters. An attempt was made to dig these in terms of actual strata (that was not very successful). When the squares were completely excavated to a depth of about three or four feet and the vertical profiles clean and drawn, the east end (north five east ten to north ten east ten) and the west end (north five to north ten) were dug by a different technique. In this technique we stripped off the top

materials, in 1950. In 1953, while working on the investigation
ancient architecture of the ruins in the area, I read this report and
made plans to visit this cave in the course of the archaeological
research.

At the end of the first month of our survey in the area
(December 1953), Francisco Guerra was contacted and a trip made to the
cave. An examination of the profiles of the treasure hunters' finds,
as well as the ancient refuse that they had discarded, showed the
cave to have been an important potential site. The plan was to
were made to undertake a major excavation which began on February
1954. Our general programme was to move into the area with from 6
to 20 men for a two-week period for excavation and then to come out
with the specimens for a rest (and back) and to purchase supplies
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first to make a vertical profile at the edge of what was to be our
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and then five east ten which had been fitted by treasure hunters.
An attempt was made to fill these in terms of actual strata (that was
not very successful). When the squares were completely excavated
to a depth of about three or four feet the vertical profiles
along and down, the east end (north five east ten to north ten
east ten) and the west end (north five to north ten) were dug out.
Different techniques. In this excavation we stripped off the top

soil zone back two-and-a-half feet from the vertical profile. Actually, one man worked on the profile and removed the top strata by trowel back from the profile to a line that was drawn two-and-a-half feet from that profile. The second man removed the loose fill by shovel and put the refuse and the artifacts ^(not found by the trowel man) knocked off by the trowel on a screen. The third and sometimes the fourth man then screened this refuse, wrapping artifacts in one package of tin foil, corn in another, obvious domesticated plants still in another, bones in another, pottery in another, and so forth, while the wild vegetable material was put in a bag. At the completion of the stratum stripping in the half square the bag was labelled, ^{the} "Portion excavated, recorded" in our daily diary, and the strata, ^{features} features, significant and ^{finds} other speculations put into ^{a section of some} ~~called~~ a square description in our note book. After the first stratum had been removed we dug the next one in the same method until all strata were removed and we had a new profile, two-and-a-half feet east or west of the original one that we had drawn. Then the rest of the square was dug and when it was finished, the profile was drawn and photographed. ^{Such} ~~Some~~ features found were also drawn separately and photographed and numbered. In such a manner north five, north five west five and north five east fifteen were excavated. This gave us two twenty-five foot profiles, that is, from east fifteen to west ten along the north five and north ten axis. These were drawn on long profile sheets and the whole profile photographed. Then using the same technique we moved southward into this new profile. First, three alternate squares were dug west five, east five and east fifteen by this method just described. When these squares were completed the blocks between, that is square zero and east ten, were removed, thereby giving us a new profile along the zero axis. That was duly recorded. This technique and system continued southward until we reached

soil some back two-and-a-half feet from the surface. Naturally, one was worked on the 15th and removed the top surface by trowel back from the profile to a line that was drawn two-and-a-half feet from that profile. The second man removed the 15th fill by shovel and put the refuse and the artifacts in a bag of all of the trowel on a screen. The third man sometimes the fourth man then entered this refuse, working artifacts in one package of tin foil, one in another, others in individual flats still in another, some in another, getting in another, and so forth, while the wild vegetable material was put in a bag. At the completion of the stratum of digging in the half square the bag was labelled "stratum excavated, recorded" in our daily diary, and the strata foot was significant and other specifications put into a source description in our notes book. After the first stratum had been removed we dug the rest and in the same section until all strata were removed and we had a new profile, two-and-a-half feet east or west of the original one that we had drawn. Then the rest of the strata were dug and the profile was finished, the profile was drawn and photographed. Some features found were also drawn separately and photographed and numbered. In such a manner we worked five, north five, west five and north five and fifteen were removed. This gave us two twenty-five foot profiles, east is, from east fifteen to west ten and west five and north five and north ten is. These were drawn as long profile sheets and the whole profile photographed. Then using the same technique we moved westward into the next half. First, these separate sources were dug west five, west ten and west fifteen by the method just described. For each stratum was completed the blocks between, that is a new area and the top was removed, trowel, giving us a new profile and the same was done. This was done by working the strata and system continued toward west until we had done

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Excavation technique

1. profile
2. profile

finally the back wall of the cave.

The stratigraphy of the refuse in the cave was for the most part easy to discern. There were however certain factors that tended to make it complicated and had to make the enumeration of our excavation somewhat complex. The ~~third~~ ^{last} factor was how we excavated. Usually, it was trowelled down to the actual bottom of the strata. This was ^{as well defined and} recorded in this one level. ^{This often meant that} And in the next level, included in the ^{with the well defined lowest charcoal or vegetable matter} same level was a loose ash or cave dust. This was taken off and then the strata below was taken off to its very bottom line as a single level. For the most part the ash and cave dust had no artifacts and did not seem to be an occupation level. ^{occupation} Thus, in truth, our levels ^{and found} included not only that of the occupation but any casual or stray find that might have been ⁱⁿ on the ash still above it. The second complicating factor was ^{that the} a stratum near the mouth of the cave were less numerous ^{than} at the back of the cave. This was due to the fact that the early occupations occurred towards the wall of the cave, and the later ones were either towards the front or all over. Thus between one occupation and another as we dug forward, new strata would appear. ^{to be} Thus In the field notes these other strata begin₁ designated Stratum 1A which was between one and two, Stratum 2A which was between two and three, and so forth. The third complicating factor was that the aboriginal occupants of the cave dug thirty-two pits from one strata to another and thereby mixing some of the artifact material. And finally, the treasure hunters had dug five pits. Fortunately, their material was fairly easy to separate from the other material; nevertheless, ^{almost all cultural material} they had ~~ruined~~ some valuable materials. However, from the excavations and ultimately from the notes, drawings and photographs we were able to attain a fairly clear picture of the stratigraphy and occupations.

finally the cover will be covered.

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somewhat complex. The third factor was how we excavated. Usually,

it was finished down to the actual bottom of the cave. This was

recorded in this way. In the first level, however, it was

some level was reached and the cave was closed. This was taken off and then

the strata below was taken off to the very bottom of the cave.

level. For the first part the cave was closed and the level was

did not seem to be a occupation level. This, in fact, was a

included not only that of the occupation but also of the level

that might have been on the top still above it. The second occupation

that was

fact was a situation where the bottom of the cave was closed

that was the bottom of the cave. This was the last level of the cave

occupations occurred towards the wall of the cave, and the level was

were either towards the front of the cave. This between the occupation

and another as we dug forward, new levels would appear. This in the

field notes these other strata were designated as 1A which was

between one and two, stratum 2A which was between two and three, and

collected. The third complicating factor was that the original

occupants of the cave had lived in the cave for a long time to another

and thereby mixing some of the strata of the cave. This, in fact, was

stratum 2A which was between two and three, and

was fairly easy to separate from the other levels; however, when

they had mixed some valuable materials. However, from the excavation

and all material from the notes, drawings and photographs we were able

to obtain a fairly clear picture of the stratigraphy and occupations

In total, there were twenty-^{five}~~seven~~ strata in the cave which contained sixteen occupation levels. In the following chart I shall roughly correlate the phases, the strata, the levels, and the occupations. Later in the report we shall no longer indicate the levels and these are recorded here in case someone may want to go back to check our original field notes or specimens.

<u>Zones</u>	<u>Occupation</u>	<u>Back Cave Enumeration</u>	<u>Front Cave Enumeration</u>	<u>Phases</u>
Zone A 1				
Zone A	Occupation 16	Level 1	Level 1 - 2	) Los Angeles
Zone B 1				
Zone B	Occupation 15	Level 1A	Level)
Zone C	Occupation 14	Level 2)
Zone D 1				) San Lorenzo
Zone D	Occupation 13	Level 2	Level 3	
Zone E	Occupation 12		Level 4)
Zone F 1				) Palmillas
Zone F	Occupation 11	Level 3	Level 5	
Zone G 1)
Zone G	Occupation 10	Level 4A	Level 6	) Mesa de Gueje
Zone H	Occupation 9	Level 4	Level 7	
Zone I	Occupation 8	Level 4B)
Zone J 1	Occupation 7	Level 5		) Guerra
Zone J	Occupation 6	Level 6	Level 8	
Zone K	Occupation 5	Level 7		
Zone L	Occupation 4	Level 8)
Zone M 1	Occupation 4	Level 9)
Zone M	Occupation 3	Level 10		) Ocampo
Zone N 1				
Zone N	Occupation 2	Level 11)
Zone O 1)
Zone O	Occupation 1	Level 12) Infernillo
Zone P	- - - -	Level 13	Level 9	

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Zone A 1	Occupation 16	Level 1	Level 1 - 2) Los Angeles
Zone A	Occupation 15	Level 1A	Level 1	
Zone B 1	Occupation 14	Level 2		) San Lorenzo
Zone B	Occupation 13	Level 2	Level 3	
Zone C	Occupation 12	Level 3	Level 4	) Palmillas
Zone D 1	Occupation 11	Level 3	Level 5	
Zone D	Occupation 10	Level 4A	Level 6	) Mesa de Gueje
Zone E	Occupation 9	Level 4	Level 7	
Zone F 1	Occupation 8	Level 4B		) Guerra
Zone F	Occupation 7	Level 5		
Zone G 1	Occupation 6	Level 6	Level 8	
Zone H	Occupation 5	Level 7		
Zone I	Occupation 4	Level 8		) Ocampo
Zone J 1	Occupation 4	Level 9		
Zone J	Occupation 3	Level 10		
Zone K	Occupation 2	Level 11		
Zone L	Occupation 1	Level 12		) Intermillo
Zone M 1	- - -	Level 13	Level 9	
Zone M				
Zone N 1				
Zone N				

Fig: Sketches of excavation cross-sections

would have been if they were in the permanent position
of the ~~original~~ ^{present}. The other possibility is that at one time
a stream from the mesa above the ^{entrance} ~~cave~~ through a sink hole and
then out the mouth of the cave and that the mouth of cave received
gravel like it was an alluvial fan. Also, the original tunnel of the stream
is now hidden. The lack of wear on the limestone slabs the gravel over
cultured materials and the higher elevation ^{of present} in the back ^{with walls} of the cave
all favor this theory. The lack of gravel on the mesa above and over
being ~~unable~~ ^{unable} to find the stream's tunnel or against this hypothesis.
Whatever, the manner of deposition of the gravel was, one thing seems
certain, the gravel was laid down during a wet period.

would have been if they were in the permanent position
of the canyon. The other possibility is that at one time
a stream from the mesa above the ^{cliff} cave through a sink hole and
then out the mouth of the cave and that the mouth of cave received
gravel like it was an alluvial fan. Also, the original tunnel of the stream
is now hidden. The lack of wear on the limestone slabs the gravel
contains and the higher elevation ^{of gravel} on the back ^{and sides} of the cave
all favor this theory. The lack of gravel on the mesa above and over
being unable to find the stream's tunnel on against this hypothesis.
Whatever, the manner of deposition of the gravel was, one thing seems
certain, the gravel was laid down during a wet period.

Now let us consider each one of the zones in some detail. The

lowest zone is called Zone I and is composed of loose gravel and

sand. Soil analysis of these materials will soon indicate that

such materials were laid down by a fairly recent stream. Included

in these gravels were a number of large thin slabs of limestone that had

obviously fallen from the roof of the cave. Well Zone I and its

inclusive rocks overlay the limestone floor of the cave. Now the

question becomes as to how this gravel deposit was laid down. There

seem two possibilities: one, that these gravels laid down when the

present stream was being cut (the present stream being 300 feet below

the mouth of the cave). This has some obvious difficulties for the

seem to be a network like they should be

limestone rocks do not ... during a very long time period.

Fig. - Extent of Zone 0 and Occupation 1 *in the excavated area of Romero's Cave*

The Excavated Area of Romero's Cave.

Overlying the gravels in Zone P in the back of the cave was a dark charcoal/brownish strata, the brown being caused by rotten vegetation as well as patches of burnt rock which is called Zone 0. Zone 0 seems to be the earliest occupation of the cave. In a few spots there is a slight amount of gravel over Zone 0, but for the most part there is quite ^{just} a bit of cave dust. Culturally, as we shall see, this stratum was laid down by the Infernillo people, and their occupation has been dated between 7,000 and 9,000 years ago. Thus I would guess that Zone 0 is perhaps 8,000 years old. Pollen from this strata shows that the climate was slightly wetter than today. A further confirmation of this wetter climate is that some of the gravel which was water-deposited, ^{overlies zone 0 and it} must have been deposited during a wet period ~~..... still seems to have been active, and I would guess that some sort of water action had put the gravel over Zone 0.~~ Further the relatively poor preservation of vegetable materials in Zone 0 would ~~also~~ speak for a slightly wetter climate than at present. The zone itself only covers a small patch in the back of the cave, roughly about 50 square feet. | Also there were two artifacts

Fig. 1 - Extent of Zone C and Occupation of the area by the Indians.

The Occupation of the Area by the Indians

Overlying the gravels in Zone C in the back of the cave was a dark charcoal/brownish strata, the brown being caused by water-
filled
vegetation as well as patches of burnt rock which is called Zone C.
Zone C seems to be the earliest occupation of the cave. In a few
spots there is a slight amount of gravel over Zone C, but for the
most part there is only a thin layer of soil. Culturally, as we shall
see, this stratum was laid down by the Inferior people, and their
occupation has been dated between 7,000 and 9,000 years ago. Thus
I would guess that Zone C is perhaps 8,000 years old. Iotted from
this strata show that the climate was slightly wetter than today.
A further indication of this wetter climate is that some of the
gravel which was water-deposited, must have been deposited during
a wet period. and to have been deposited, and I would
guess that some of the water action was due to the gravel over Zone C.
Further the relatively poor preservation of vegetable materials in
Zone C would also speak for a slightly wetter climate than at present.
The zone itself only covers a small patch in the back of the cave,
roughly about 50 feet long. Also there were two outcrops

from down in the gravel in roughly the same position in square west ten^{and}. These ~~also~~ have been included as being part of this occupation. In total this small strata^{um} composes about sixteen cubic feet of refuse. The small ^{size} ~~sides~~ of the area plus the facts that the burnt rocks are ^{from} just a single hearth ~~it~~ seemed to indicate that the size of the group which laid down the strata was not much larger than a family, that is, a micro-band. Vegetable materials are extremely rare and only twenty specimens were found. There are no flowering fragments found, though there are a few ^{wild} pumpkin seeds. These pumpkin seeds suggest an occupation in the early part of the summer. The thinness of the strata plus the subsistence, which we will speak about in a moment, would seem to indicate that the family or micro-band that laid down the strata^{um} only occupied the cave for a short time. Thus from the little evidence we have here they would seem to be nomadic.

There were thirty-two unidentifiable bones. All but one of these might very well be from a deer. The one exception is one that seems to be a bird leg bone. ^{There were} ~~The~~ two bones that were identifiable and both of these are of the white-tailed deer. Many of the bones had been scraped I believe for marrow extraction. These materials would seem to indicate that the group did some hunting. Further confirmation of their hunting is the Abasolo point, Infernillo point, the fragment of an atlatl main shaft, and the thin side scraper.

^{of the occupation as being by a one might suggest that the}
~~Thinking in terms of a family,~~ two deer killed might very well last them as much as a month of their occupation in this area. Their hunting diet however, was supplemented somewhat by twenty wild plant

specimens. Three of these wild specimens are from wild squash;
^{One ~~pumpkin~~ seeds from a piece may be}
~~Three others~~ are from a very small variety of pumpkin, cucurbita pepo, which
^{indicates a use of domesticated plants}

The one humped scraping plane may very well have been used to pulp some of these wild vegetable materials, and ^{is} there is a further indication of their food gathering activities. An estimate might reveal^{is} that as far as subsistence activities are concerned, ~~that~~ this group gained perhaps about sixty percent of subsistence by hunting, and about forty per cent by wild plant collecting. *and less than one percent from agriculture*

Other artifacts in this strata give us a glimpse of some of their cultural activities. One small fragment of a chequer-woven mat with an oblique corner indicates that they ^{manufactured} ~~used~~ mats and perhaps were using sleeping mats. The other artifact is a small strand of cord made from two ^z ~~M~~-twisted hard fibres to form a ⁵ ~~4~~-twisted ^{cord} ~~yarn~~. In terms of cultural relationship the Infernillo point and the chequered mat are diagnostic of the Infernillo phase which was found predominantly in Tm c 248. The humped scraping plane, ^{and Abasco point} also ~~is~~ common in this culture. The side scraper, the string and the atlatl fragment, however, are too general to make for any exact cultural connections.

Overlying Zone 0 is ash and cave dust and a little gravel. There are no artifacts in this strata and it seems it is considered to be the upper part of Zone 0, sometimes called Zone 0-1, and this seems to be a time when the cave was not occupied. In terms of our Carbon 14 dates, this top part of Zone 0 without Occupation ~~is~~ probably represents a 2,000 year time period.

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Fig. - Zone N, Occupation 2, Extent in
the Excavated Area of Romero's Cave.

Overlying the cave dust of Zone O-1 is Zone N. This is a thin charcoal strata^{um} with some vegetable material in it. Some of the charcoal has been dated by Carbon 14 as being 3,244 B.C. \pm 200 years (M₁) (M₁). We unfortunately have no good climatic data or pollen from this small thin strata^{um}. The zone itself covers^d about 75 square feet, ~~and was~~ usually only 2 inches thick. In total it had about 8 cubic feet of refuse. There were no feature in it and no evidence of burnt rock. Besides^{um} the small extent of the strata^{um} it seemed^S to indicate that it was occupied by a micro band, that is, a group not very much larger than a family. The limited extent of the strata and its relative thinness would seem to indicate that this again was^a/relatively temporary occupation. The squash seeds also indicate that this short occupation probably occurred in the late spring or early summer.

One identifiable deer bone and one identifiable rat bone and twenty split bones, ^{(broken} perhaps for marrow, would indicate that these

people did some hunting. The Abasolo and Tortugas projectile points and side scrapers may very well have been the implements used in the *dealing with the chase* hunting. However, the greater bulk of food ~~and~~ seems to have been wild plant material, ^(205 specimens) There was one capsule of Eriopsicum grass and a pod of wild Phaseolus coconinus, that is runner beans. The mortar, the scraping planes and the saw-like chopper were probably implements used in preparing this wild food stuff for meals. The one-squash stems seems to indicate that while these people were basically food-gathering, they did use ~~wild~~ ^{domesticated} plants in probably much the same manner as they used wild plants. An estimate of the subsistence of this occupation would seem to indicate that probably over sixty per cent of their food came from wild plants and perhaps ^{thirty-five} ~~forty~~ per cent came from ^{with a very small amount from a domesticated plant} hunting. Other artifacts are relatively rare. One of the activities of this occupation seems to have been working leather. The side scraper and perhaps the scraping plane and an antler piercer all might have been tools used in preparing the skins. There also is a two-strand string, one piece being with ^{about} V-twisted yarn and a hard fibre, while the other being S-twisted yarn of a softer fibre. There is also a little fragment of a chequer-woven mat.

The Abasolo point, the small flake side scraper and the ² V-twisted string and the chequer-woven mat all are quite similar to what was found in Occupation 1. However, Occupation 2 has a number of traits that definitely place it in the Ocampo phase and not in the earlier Infernillo phase. One of these is the Tortugas triangular point and another is the fragment of a mortar. Also, saw-like choppers and humped scraping planes are more common or as common with Ocampo as they are with Infernillo. The S-twisted yarn of string and the piercer are, of course, very general traits and could belong to any

of the latter phases

culture.

Overlying Zone N is another layer of ash material that is called Zone N-1. ^{and last} Actually a separate level, Level 9, came from it. ^{It seems to represent a period when the cave was not occupied.}

Next comes a thin 1-inch thick strata which covers a small portion in the back of the cave which was composed of well-preserved vegetable material with a little charcoal in it. This Occupation 3 of Zone M made up about twenty-one cubic feet of refuse. About one fifth of this refuse came from two pits, one ^{was} with a small roasting pit, that is a pit filled with burnt rock and charcoal, while the other pit was a little bit larger and was ^{crammed} concealed with leaves of Huapillas. The single fireplace and the extent of the refuse would seem to indicate that a single family or a micro band laid down the strata. The thinness of the layer would again indicate a relatively brief occupation, though perhaps ^{a little} longer than the previous two. A single flower of cactus plus beans and squash might indicate that this occupation occurred during the ^{late} spring, perhaps during the months of April and May. Our estimates of subsistence would seem to show that ^{slightly less than} about half their food came from hunted material, ^{and the remainder from agriculture} and the other half from plant collecting. The single fragment of deer skin, a piece of a bone of a skunk and bone of a bird as well as thirty-four split bones were evidence for hunting. There are however a number of tools that also can be connected with the chase. These include Abasolo, Tortugas and Abasolo points a flat end atlatl foreshaft, a side scraper^s both of the thick and thin variety, a pebble chopper, a discoidal scraper, and ^{elongate end} a long-blade scraper. All of these could somehow be connected with preparing animal remains. About as important as these remains are hundred-and-thirty plant specimens. Among these plant specimens are ^{and} tripiscum grass, runner beans, ~~a few grains of panicum,~~

Verifying zone B is another layer of soil that is
called zone B-1. According to the level of zone B-1.
Next comes a thin 1-inch thick strata which contains a small
portion in the back of the cave which was composed of well-preserved
verruca material with a little charcoal in it. This location is
of some value up about twenty-one cubic feet of refuse. About one
fifth of this refuse came from two pits, one with a small resting
pit, that is a pit filled with burnt rock and charcoal, while the
other pit was a little bit larger and was connected with the rest of
Hapallia. The single fragments and the extent of the refuse would
seem to indicate that a single family or a small band lived down the
strata. The thickness of the layer would again indicate a relatively
brief occupation, though perhaps longer than the previous two. A
single flower of some plant has been found and might indicate that
this occupation occurred during the spring, perhaps during the month
of April and May. Our estimates of subsistence would seem to show
that about half their food came from hunted animals and the other
half from plant collection. The single fragment of deer skin, a piece
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that also can be connected with the chase. These include flint
knives and blades points a list and a list of tools, some scrapers
both of the thick and thin variety, a pebble mortar, a discoidal
scraper, and a few other things. All of these could somehow be
connected with preparing animal remains, food as important as these
remains are hundred-and-thirty plant specimens. Among these plant
specimens are Trifolium grass, runner bean, Phaseolus of Phaseolus.

as well as remains of a gourd represented by ten rind fragments, a pepper remain, and a number of seeds of squash, as well as two pods of common beans of the yellow-seeded variety. The flat and humped scraping planes and the saw-like chopper may have been used to make these vegetable remains into a palatable dish. One of the activities of this group while it occupied the cave seemed to have been the making of hunting tools. The gouge may very well have been used to work wood for making the atlatl foreshaft, which - I might add - is not quite finished, ^{it could be used} also, for making the pointed wooden stick and for making the hammered split and conical wedges. Another activity seems to have been working skin; the small piece of deer skin is obviously an indication of this. Split and conical wedges may have been used to peg down the skin while it was being scraped, while the discoidal scrapers and side scrapers and perhaps the scraping plane [?] ~~strand~~ may have been used in ^{flushing} ~~working~~ the skin. They all may ~~also~~ ^{the end} have been used for piercing the ^{hide} ~~same~~ skin. There was a single fragment of twilled mat which may have been, of course, a sleeping mat and both the awl and the pointed stick may have been used in making this mat. Again, there are a number of pieces of string. As far as cultural connections are concerned, the ² ~~V~~-twisted ^{hard} yarn string, the scraping plane, the atlatl, the awl and the chopper, and the thin side scrapers seem to ~~have been~~ ^{be} a continuity from the earlier horizons. None of them are particularly diagnostic artifacts. The Abasolo, Nogales and Tortugas points, however, are definite Ocampo artifacts. Twilled mats, discoidal scrapers and gouges are also common in these horizons. Other more general traits are the pointed stick, the wedges and the pebble choppers and the elongate scrapers. These, of course, are not unlike other Ocampo remains. ^{of} Level 9.

as well as remains of a round object, possibly a ball, and a number of seeds of a nut, as well as two
pods of common bean of the yellow-seeded variety. The flat and
impressed seedling plates and the stone-like objects may have been used
to make these vegetable remains into a portable dish. One of the
activities of this group while it occurred the boys seemed to have
been the making of pointed wedges. The boys may very well have
been used to work wood for making the pointed wedges, which - I might
add - is not quite finished. Also for making the pointed wooden
stick for making the pointed split and conical wedges. Another
activity seems to have been working with the small piece of deer
skin in character as indication of this. Split and conical wedges
may have been used to peg down the skin while it was being scraped,
while the discoidal scrapers and side scrapers and perhaps the
scraping plane may have been used in working the skin. They
all may also have been used for piercing the deer skin. There was
a single fragment of twisted net which may have been, of course,
a spearing net and both theawl and the pointed stick may have been
used in making this net. Again, there are a number of pieces of
stick. As far as cultural connections are concerned, the 7-twisted
yam string, the scraping plane, the awl, theawl and the choppy,
and the thin side scrapers seem to have been a continuity from the
earlier horizons. None of them are particularly diagnostic artifacts.
The discoidal, awls and Tortoise points, however, are definitely
Cocle artifacts. Twisted mats, discoidal scrapers and gouges are
also common in these horizons. Other less general traits are the
pointed stick, the wedges and the pebble scrapers and the elongate
scrapers. These, of course, are not unlike other Cocle remains, of

the
Overlying/lower vegetable material of Zone A was a brown grey soil. There also was a considerable amount of charcoal in this zone which was called Zone M-1. Originally it was thought to be an occupation level, was excavated and called Level 9. However, when it came time to analyze these materials no artifacts were found in it and there were some indications of intrusions of vegetable materials from the zone immediately above it, Zone L. Thus I would believe that Zone M-1 again is a time when there was no occupation in the cave. However, it would seem that there was probably a relatively small amount of time between Zone M, Occupation 3, and Zone L, Occupation 5.




Fig. - Extent of Zone L, Occupation 4 in
the excavated area of Romero's Cave.

The next area or zone in the cave was called Zone L and in it was found Occupation 4. This stratum is of brown vegetable material. It varies between two and four inches in thickness. Within the excavated area it covered about nine 5-foot squares, but there was considerable evidence that to the west where we excavated it was a ^{dead end} ~~good deal~~ more

Overlying the level of Zone 4 was a brown red soil. This also was a considerable amount of charcoal in the zone which was called Zone M-1. Originally it was thought to be an occupation level, was excavated and called Level 2. However, when it came time to analyze these materials no artifacts were found in it and there were some indications of intrusions of vegetation from the zone immediately above it. Zone 1. Thus I would believe that Zone M-1 is a time when there was no occupation in the cave. However, it would seem that there was probably a relatively small amount of time between Zone 4, Occupation 2, and Zone 5, Occupation 3.

Fig. - Level of Zone 1, Occupation 4 in the excavated area of Mammoth Cave.

The next area of zone in the cave was called Zone 1 and it was found Occupation 4. This structure is of brown vegetable material. It varies between two and four inches in thickness, showing the presence of some 5-10 foot squares, but there was considerable evidence that the west where we excavated it was a good deal more

extensive. On the basis of this I would guess that there are at least sixty cubic feet of refuse in this stratum. Extending down from this stratum was one pit (26) with fired rock in it. And there also was one rather shallow irregular pit which had quite a bit of wild plant material stored in it. Looking at the extent of the refuse one might guess that it had been occupied and laid down by perhaps a family or two, in other words, something somewhat between a micro-band and a macro-band, but still more of the micro size than of the larger size. There is some evidence that it was occupied for a slightly longer time period than our previous horizons. In the refuse were some flowers which would have been picked in the spring but there also were nuts, which would be fall picking, as well as peppers, corn, bean, and so forth, that I would guess was probably in the summer. Thus I would ^{believe} ~~guess~~ that this occupation was probably by a fairly small group but that it was seasonal, perhaps running from sometime in the spring to sometime in the fall.

As far as the actual subsistence is concerned there were eighty bone fragments. Most of these were unidentifiable and had been split for their marrow. There were however two deer bones and a fragment of deer skin and also a tooth of what seems to have been a dog. There also is one bone of a Cocomixtla. Beside these few bones there were other evidences of hunting. There was an Abasolo point, and then wrapped in ~~leaves~~ in the back of the cave were three Tortugas points, two of them attached to atlatl foreshafts and one attached to a lance shaft. Beside these obviously hunting implements there also were a number of scrapers which might be connected with the curing of animal skin which were taken ^{in chase} ~~at the hunt~~. However, the predominant material was ^{wild plant} food stuff. There were 408 plant remains. Among these plant remains were some ^{grains of} tripsicum as well as some ~~grains~~ of panicum. There also were a number of implements

that could be connected with collecting and preparing plant remains.

The net and the basket, both open types more or less like sieves certainly could have been used to bring in plant materials to the cave as well as sift ^{the} the plant materials for seeds. The sawed chopper and the scraping plane also could have been used for preparing these food remains. Somewhat different from our previous remains are quite a variety of agricultural plants though they are rather limited in number.

These people certainly were doing some sort of limited incipient agriculture. There are fragments of a gourd rind, ~~there is~~ a squash stem,

and in the feces there were definite evidences of bean tissue and bean pod, probably indicating that the beans were green. There also were a ^{in the feces}

couple of chili pepper seeds and a number of pieces of corn silk with the pollen still adhering. It is most peculiar that nowhere in the

actual layer did we find any whole corn cobs. One cannot help but

wonder if ^{they} ~~their corn activities~~ were not actually planting corn but

rather collecting some sort of wild corn which they eat green, probably chewing the cob and sucking out the juice and nutrition and then

spitting out the remains. ^{and then the corn} In such a process some of the pollen and

some of the corn silk, of course, might have gotten swallowed. An ^{outside but defecated inside}

estimate of these remains would probably indicate that about eighty

per cent of their diet was from wild plants, about ten percent from

hunting, and perhaps another ten percent from a variety of domesticated plant species. Some of the sticks from these vegetable material were

analyzed for Carbon 14 and revealed the date of 2,604 B.C. \pm 200 years.

Also, some of the dust of the pollen was analyzed and revealed that

these people were probably living in the area when it was as dry or

perhaps a little drier than it is at the present time.

^{other} Now as to the cultural activities of our fourth occupation.

One activity seems to have been the chipping of stone artifacts. There is an antler hammer and there were many more flint chips ^{IN Zone L} than there had been in any of the previous ^{horizons} ~~ones~~, and I suspect that the Abasolo and Tortugas points ^{found} were made during this occupation. In fact, these three Tortugas points with the foreshafts, neatly wrapped in a leaf, ^{might be} seemed ~~like~~ ^{showing that a} one workman had just finished making these and set them aside to be used later. Beside this activity of chipping flint they seem also to have been working skins. There was one piece of deer skin which had been scraped on one surface, while hair was adhering on the other. The thick and thin side-scrapers may have been used for slicing and initial scraping of ~~this~~ ^{skin}; the elongate end scraper and the disk scraper could have been used to take off the fat ~~tissue~~ from the skin.

Another activity which these people may have done during their long seasonal occupation was making wood tools. A fragment of a gouge may have been their working implement. The atlatl ^{foreshaft} and lance, the pointed sticks and the wedges all could have been ^{made with this tool} ~~used~~ for such. Still a further activity of the occupants of the cave was weaving. A number of different kinds of cords were made. Two of these cords were made with ^Z ~~N~~-twisted hard-fibre yarn. One was composed of cord made of two yarns, while a second was composed of four yarns. There also were some cords made of softer fibres. The yarns and ~~knees~~ were S-twisted and the cord itself was made from two yarns which, of course, was twisted in a Z direction. Many of these cords had been tied into knots, the commonest being the simple over-hand knot, but almost as numerous were square knots. Whether these strings were really to tie ^{or lasso} ~~things~~ ^{objects} or parts of traps is difficult to say from our slim evidence.

Somewhat more complex than the making of strings was the making of nets, ~~or a net~~ and a basket. The pointed stick of wood may have been

One activity seems to have been the carrying of objects. There
is an upper room and there were many things there and
left in any of the rooms, and I suspect that the things were
Tortugas points were made in this occupation. In fact, these things
Tortugas points with the tortugas, neatly arranged in a leaf, seemed
like one tortuga had just finished making them and set them aside to
be used later. Inside this activity of old things they seem also
to have been working things. There are one piece of wood which had
been scored on one surface, while hair was adhering on the other. The
thick and thin side-scarpers and a few pieces for slicing and scraping
scoring of sticks, the stone and scraper and the fish scraper could
have been used to take off the the things from the sticks.
Another activity which these people may have done during their stay
a second occupation was making wood tools. A fragment of a gouge may
have been their working implement. The small and large, the pointed
sticks and the weights all could have been used for tools. Still a
further activity of the occupants of the cave was weaving. A number
of different kinds of cords were made. Two of these cords were made
with twisted hard-fibre yarn. One was composed of a single cord of
two yarns, while a second was composed of four yarns. There also were
some cords made of softer fibres. The yarns and threads were twisted
and the cord itself was made from two yarns which, of course, were
twisted in a Z direction. Many of these cords are seen tied into
knots, the commonest being the simple over-hand knot, but almost all
knots were square knots. Whether these things were made to be
used as parts of traps is difficult to determine on this evidence.
Somewhat more complex than the making of strings was the making of
nets, of a net and a basket. The pointed stick of wood may have been

the implement used in pushing the fibres through in making the basket. ^{the coiled elements}
The basket again is of the sifter-type with quite large spaces between the coils. The coils are of a bundle foundation and the element tying them together are what I have called loop ^{and} twist ^{variety}. The net is also of the loop and twist or full-turned coil type of net. ^{a fine I}
^{twilled net occurred that also might have been part of basket}

Now as to cultural relations. There are still some resemblances to our earlier horizons ~~and the earlier~~ Infernillo horizons but they are of a most general nature and include the Abasolo point, the scraping plane and the ²-twisted yarn. All these traits seem to carry on into Ocampo times. Definite Ocampo ^{traits} ~~times~~ are the Tortugas points, the disk scrapers the sawed choppers, the gouge and the loop and twist net and loop and twist basket with a bundle foundation. ^{and the twilled basket} Most of the other traits are of a fairly general nature and could belong to any ~~one~~ of a number of cultural phases. ~~This~~ ^{Zone} L is perhaps our best example in the Romero's Cave of a component of the Ocampo phase. As we shall see the occupation of the Ocampo phase in this cave is not quite so extensive as in the adjacent cave, but nevertheless it is one of our larger ones. Beside the obvious cultural and agricultural differences between the earlier Infernillo culture and Ocampo, this stratum brings out a number of significant other differences, one is that the Ocampo remains seem to have been during a dry climatic period while Infernillo ones had been in a somewhat wetter time period. Secondly, there seems to have been a considerable shift in the subsistence pattern with the Ocampo people, dependant mainly on wild plant material with about as much incipient agricultural remains of domesticated plants as they obtained from hunting. This in contrast to Infernillo which had about as much wild plant collecting as hunting and ^{they} just a few extremely small amounts of domesticated plants.

Fig. - Zone K, Occupation 5 in the excavated area of Romero's Cave.

→ Lying immediately on top of the vegetable strata of Zone L was a grey ash layer with a very few pieces of vegetable material in it. This seems to be ^(Zone K) ~~a natural~~ ^{an actual} occupation area, Occupation 5, ^{collected} ~~and~~ as we shall see has many cultural differences from that of previous horizons. It occupies very much the same area in the excavated portion of the cave that Zone L did. ^{estimated as having} It had 22 cubic feet ^{of refuse} ~~within the cave~~. However, there is one difference; Zone L seems to have been expanding into the unexcavated area, while Zone K is definitely diminished. Thus in actual truth is a much smaller area of occupation and in total number of estimated cubic feet much less. I would estimate that this was probably only a family or a micro-band occupation. While the layer gets as thick as three inches in certain places, it is nowhere as clear or as well defined as Zone ^L ~~A~~ and the vegetable material would seem to suggest that it is less than one season, probably the cool part of the summer. The subsistence seems to be very much different. No bone material was found

Fig. - Bone 4, Occupation 2 in the excavated area of S. 10000's Cave.

This immediately on top of the vegetable remains of Zone 1 was a grey ash layer with a very few pieces of vegetable material in it. This seems to be a natural occupational layer, Occupation 2, and as we shall see has many other differences from that of the previous horizons. It occupies very much the same level in the excavated portion of the cave that Zone 1 did. It had 25 radiocarbon dates within the cave. However, there is one difference; Zone 1 seems to have been extending from the unexcavated area, while Zone 2 is definitely delimited. This in actual fact is a small smaller area of occupation and in fact many of the radiocarbon dates are very recent. I will discuss this very briefly only a family or a micro-band occupation, while the lower part of the ash zone is in certain places, it is nothing but a clump of ash well defined as Zone 1 and the vegetable material would seem to suggest that it is less than one season, probably the cool part of the season. The radiocarbon dates are very much different. No radiocarbon was found

whatsoever. However, there were a number of artifacts that could be connected with hunting: Abasolo point, ^{C,} Tatan and Matamores points, rabbit sticks and atlatle foreshafts and ~~atlatle~~ mainshafts, a barbed wooden atlatle foreshaft as well as thick and thin scrapers. All would seem to be connected with ^{game} hunting. However, there is a possibility that they also could be connected with warfare or be connected with the making of hunting implements for hunting at another season when they are no longer occupying the cave. Wild plant remains, 0143, are relatively rare. There is some wild squash seeds and rinds ~~in here~~ and there are a few implements that would seem to indicate food collecting, ~~the chopper~~, the thick and thin chopper, the flat scraping planes, the net and the basket ~~all might be connected with it~~. Almost as important as the wild plant material, and certainly as important as the evidence of hunting, was the wide variety of agricultural remains. Here we have ^{not only} squash seeds, rinds and stems, ^{but also} ~~we have evidence of~~ an actual corn leaf and a gourd container. While none of these plant remains are very numerous there does seem to have been a shift with a good deal less hunting ~~which seems which~~ which seems to have been somewhat replaced by agricultural remains. Other artifact material besides the ones mentioned previously seem to have been fairly rare and for the most part seem to be connected with weaving. There is some ^Z ~~V~~-twisted yarn and some S-twisted yarn cord, ~~there is~~ a single simple loop net bag, and ~~there is~~ a split-stitch basket. There ~~also is~~ ^A small pointed stick which might have been used in weaving these baskets ^{occurred}.

Whichever, however, there were a number of small holes that could be

connected with hunting: the hole in the wall, the hole in the

rock above the entrance and the hole in the wall, all would

be connected with the cave. It is possible that the hole in the

rock above the entrance is a possibility.

It is possible that the hole in the wall is connected with the

entrance of the cave. It is possible that the hole in the wall is

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Fig. - Zone J, Occupation 6 in the excavated area of Romero's Cave.

While many of the artifacts of Zone K are like those found in the previous horizons, the Catan and Matamores points, the rabbit sticks and the barbed point seem to indicate that we are dealing with a new cultural type, which I am calling the Guerra phase. ^{Underlying} ~~Over~~ the gray ash was a distinctive clearly defined zone, called Zone J, Occupation 6. In the front of the cave it was reddish brown in colour, while in the back it pure brown vegetable material. In fact this was one which was ^{encountered} ~~numbered~~ in the initial part of our excavation and which we followed all the way through, and it often acted as a sort of data ^{plane} ~~and remembering~~ in defining our layers to be excavated and also in numbering ^{levels} our excavations. From the dust of this extensive zone of vegetable material we obtained a pollen sample. This pollen sample would seem to indicate that the climate during this time period was wetter than it is at present and perhaps as

Fig. 1. - Section of the soil profile
showing the position of the
various horizons.

While many of the artifacts of Zone 4 are like those found in the
previous horizons, the latter are distinguished by the presence of the
artifacts which are in fact, they are associated with a new cultural level.
which is an earlier phase. Investigating the artifacts was
difficult, as they were scattered over a large area, in the
front of the site. It was reddish brown in color, while in the back it
was brown and sandy. In fact this was the which was
in the initial part of the excavation and which we followed all the way
through, and it often acted as a sort of date line in defining the
layers to be excavated and also in indicating our progress. From the
rest of the extensive zone of vegetable material we obtained a pollen
sample. This pollen sample would seem to indicate that the climate
during this time period was wetter than it is at present. It is

Wet as during the initial Infernillo occupation. A few sticks were also taken from this vegetable layer for a Carbon 14 date. This Carbon 14 date of roughly 2,700 B.C. seems to have been contaminated. I cannot help but believe that ^{some of} the sticks sent ^{in for analysis} had been dug up by the occupants of Zone J from an earlier level. ^{This belief is based on C14} ~~In terms of the dates below it~~ ^{this stratum} and the dates above it, ^a I would guess that probably ^{would be a} the date of 1,700 or 1,800 B.C. ~~is~~ more correct than this one. The layer itself included what we estimate to be as about 380 feet cubic feet of refuse. Extending down from this layer were three hearths and a grass lined pit, perhaps a pit used for sleeping. The extensive size and the numerous hearths suggests that the occupants were ^a micro bands. The thinness of the strata and the kinds of plant remains that we have suggest that these people moved into the cave to live in its cool atmosphere during one summer.

Fifty-three unidentifiable bone fragments were found and a couple of these seem to be a deer. One identifiable bone is from an actual deer. Implements that seem to be connected with hunting are Abasolo, Catan and Matamores projectile points; an atlatl mainshaft, an atlatl foreshaft and other implements such as the disk scraper, the antler piercer and the elongate scraper may have been used also for working on hunted material. However, much more numerous than the bones were the 242 plant remains. ^{including} ~~With these are~~ ^{amaranth, manihot} wild squash, tripsicum grass, wild runner beans; The muller and the saw-like chopper seem to have been materials that were used in preparation for these wild food stuffs. ~~Again though,~~ There are considerably wider varieties of domesticated plants. These included gourds, squash seeds of both cucurbita pepo and cucurbita moschata. There are also bean remains from these materials. There are also four corn cobs. A long, relatively pointed stick with a pounded end might very well have been the implement used for making holes in the ground in which to drop

was during the initial information session. A few blocks were
also taken from this vegetation layer for a carbon 14 date. This carbon
in some of roughly 2,500 B.C. seems to have been contaminated. I cannot
help but believe that the date is not correct. The date of the
of some 1 from an earlier level. In some of the cases below it and the dates
about 10,000 B.C. I would guess that roughly the date of 10,000 or 12,000 B.C. is
more correct than this one. The layer itself is below what we estimate
to be about 100 feet cubic foot of refuse. Bringing down from this
layer were three hearths and a grass lined pit, which is not used for
storage. The extensive size of the hearths suggests that
the hearths were made of stone. The thickness of the stone and the kinds
of plant remains that we have suggest that these people were into the
game to live in its cool temperatures during the summer.
Fifty-three unidentified animal remains were found in a couple of
trees seem to be a deer. One identified one is from an actual deer.
Remains that seem to be connected with hunting the animals, catfish and
fishes are present; an animal remains, an animal remains
and other animals such as the duck, the waterfowl and
the animals seem to have been used for food on buried materials.
However, much more is needed than the 24 plant remains.
The remains are with some of the plant remains, with waterfowl, the
other and the saw-like choppy seem to have been animals that were
used in preparation for food with food plants. In some cases, there are
considerably wider varieties of domesticated plants. These included
squash, squash seeds of *Cucurbita pepo* and *Cucurbita maxima*. There
are also some remains of *Phaseolus*. There are also four corn cobs.
A large, relatively white corn with a rounded end which may have
been the same as the one that was found in the ground in which to drop

the kernels of corn during ~~corn~~ planting season. The only other activity that we have evidence of is that of weaving and these are but two strands of two-yarn cord of ²/₂-twisted hard fibre yarn. As far as cultural relationships are concerned, the Catan, Abasolo and Matamores points and the muller as well as the agricultural plant remains would seem to show that we are dealing with a component of the Guerra phase. Again, the number of the scraper types and the Abasolo points and the saw-like chopper seem to be hold-overs from an earlier horizon.

Fig. Zone J-1, Occupation 7 in the excavation of Romero's Cave.

In most parts of our excavation this more distinct Zone J gradually became more yellow brown in colour, or more like terra rosa colour. in the next layer above. This, however, in spite of its connections with the earlier parts seems to be a separate occupation which we are calling Occupation 7. The reason I say this is that in the extreme back wall of the cave there was an actual thin strip of cave dust

separating this yellow-brown ash from the lower reddish-brown ash. The terra rosa soils in this layer would certainly indicate a much wetter climatic period. The strata itself is relatively small and extremely thin; it composes only about 68 cubic feet in the whole cave. On the basis of this limited material I would guess we are dealing with a small group who occupied the cave for a single season.

There are fifty-two unidentifiable bones and almost all of these are split. Some of the unsplit ones, however, seem to come from birds. The rest of the fragments are too small to say what animal. An Abasolo point, Matamores and Catan points and a disk scraper also seem to have been connected with the chase. 262 wild plant remains occurred as well as a chopper and a scraping plane that could have been used in preparing these wild plant remains. Again, there are indications that agriculture was certainly as important as hunting. We had both gourd and pumpkin remains, we have corn cobs, and we have definite evidence of the common kidney bean. There also was a ball of string which is S-twisted (and probably hand-twisted rather than spindle whirl-twisted) of cotton string. This indicated still another domesticated plant that these people had. The only other activity besides subsistence indicated in the cave is again the making of string. Besides the actual cotton string there are two cords of soft S-twisted yarn. The Abasolo, Catan and Matamores points as well as the food stuffs indicate that we are dealing with a component of the Guerra phase.

appearing this yellow-brown soil from the lower reddish-brown soil. The ferric rust soils in the lower would be indicative of much wetter climatic period. The strata itself is relatively small and extremely thin; it contains only about 30 cubic feet in the whole cave. On the basis of this limited material I would guess we are dealing with a small group who occupied the cave for a short season.

There are thirty-two unidentified bones and almost all of these are small. Some of the small bones, however, seem to come from birds. The rest of the fragments are too small to say what animal. An Absolo point, Natrona and Cattle points and a fish harpoon also seem to have been connected with the group. 2500 years ago remains occurred as well as a harpoon and a spearhead which could have been used in preparing these wild game resources. Again, there are indications that agriculture was certainly as important as hunting. We had both ground and pebble tools, we have corn cobs, and we have definite evidence of the common kidney bean. There also was a ball of string which is twisted (and probably hand-twisted rather than spindle-whirl-twisted) cotton string. This indicated still another domesticated plant that these people had. The only other activity besides subsistence indicated in the cave is again the making of string. Besides the actual cotton string there are two cords of soft twisted bark. The Absolo, Cattle and Natrona points as well as the tool stone indicate that we are dealing with a component of the same group.

Fig. - Distribution of Zone I in
excavated area of Romero's Cave.

Directly over the yellow ash zone is Zone I, Occupation 8. This is a relatively thick layer of pure vegetable material. Pollen from this ^{and plants} strata ^{studied} has been ~~analyzed~~ and reveals that we are dealing with people who lived here during a wet period. As far as the strata ^{is} is concerned it is located mainly in the back of the cave. It however seems to be expanding and probably was larger in the unexcavated part of the cave than in the area we dug. An estimate of the number of cubic feet of this relatively thick layer of refuse is that it had about 200 cubic feet. Within the strata were three hearths and right back against the far walls of the cave was a burial pit. In terms of the size of the area occupied it would seem that we are dealing with a macro band; the three hearths would mean at least three families and it might have been as many as six families. The large amount of vegetable material with the corn and the bean and the squash may very well mean that we are dealing with a people who were here during

Fig. 1 - Disposition of Zone I in excavated area of Romero's Cave.

Directly over the yellow ash zone is Zone I, Occupation 8. This is a relatively thick layer of pure vegetable material. Pollen from this strata has been analyzed and reveals that we are dealing with people who lived here during a wet period. As far as the strata is concerned it is located mainly in the back of the cave. It however seems to be expanding and possibly was larger in the unexcavated part of the cave than in the area we dug. An estimate of the number of cubic feet of this relatively thick layer of refuse is that it had about 200 cubic feet. Within the strata were some hearths and right back against the far walls of the cave was a small pit. In terms of the size of the area occupied it would seem that we are dealing with a narrow band; the three hearths would mean at least three families and it might have been as many as six families. The large amount of vegetable material with the corn and the beans and the squash may very well mean that we are dealing with a people who were here during

a harvesting season and probably were here the whole ^{next} season. Thus Occupation 8 is a seasonal occupation by a macro band.

In terms of subsistence, seventeen unidentifiable fragments of bone were found and one of these seems to be the leg of a bird bone. Mixed ^{with the} in ~~would be a~~ tremendous amount of vegetable material were a number of implements that might be connected with the hunt, these include the Catan and Matamores points, a wooden dark blunt, an atlatl main shaft, as well as discoidal and flake scrapers that might have been used for skinning. Wild plant material number 360 specimens; included in these are a number of huapillas leaves, opuntia leaves, panicum, tripsicum, ^{manihot} and amaranth. Implements that might have been used to prepare these wild plants are the choppers ^{plant} and these materials might have been collected in the various baskets and nets we found with the refuse. These wild food materials represent between 50 and 70 percent of the total food stuff for the layer. The final subsistence activities seems to be agriculture. These materials represent from perhaps 20 to 30 percent of the diet of the people of this layer and this activity seems to have been more important than hunting. Included in the agricultural stuff are 250 corn cobs, some bean fragments, some pumpkin fragments, some cotton, some gourd fragments as well as a whole gourd container and a single possible seed of teocentli.

Besides tools ^{concerned with their} ~~in evidence of~~ ^{pulling} subsistence we have some proof of other activities. The flake and discoidal scrapers indicate that skins were being prepared during the occupation, and a single fragment of a leather sandal or huarachil ^{had been completed} seems to be one item of skin that they ~~made into~~ ^{manufactured} a tool. Perhaps the most numerous activity we have evidence of is weaving. With the associated burials and in the strata itself there was a great deal of string. Much of the string is ² ~~1~~-twisted hard fibre

and the following season the birds were more numerous and the nesting season was more successful.

Occupation is a seasonal occupation of a

For this seat of thought.

yarn which has been made into four-yarn cord. There are three S-twisted hard yarn cords, four S-twisted hard yarn cords and some other simpler cotton strings. None of this cotton string seems to have been made by use of a spindle whirl. Some of this string had been used to make net bags. There is a twisted loop bag, a notless twisted net bag, and a simple looped bag. There also is a twined (basket-maker-like) blanket with a black geometric design woven into it. This may have been made on a ^{belt} simple loom. There also is a plain woven chunk of cotton cloth. Besides these woven objects there are a number of baskets most of them are of the coiled type. Most numerous are split-stitch bundle foundation baskets, either in the form of large pans or in the form of bowls. There are also two better distinctive sifter-type bags with interlocking twisted ^{stitch} ~~domina~~. The final items of weaving are the mats; most of these are twilled and are distinctive in having special types of ^{selvages} ~~selvages~~. They also have either square or rounded corners and these lateral borders either are made by overlapping double strands or by one over one, or two over ^{strands} two, diagonally bent edges.

Equally distinctive of this Guerra horizon are its burials. All ^{bodies} three were placed in one large shallow pit, 3 feet by 4 feet, at the back wall of the cave. literally in a small cave in the big cave. First the pit had been lined with palm leaves. Next a young adult male had been laid in the pit on his left side with head to the southwest. He was in a semi-flexed position with his left hand flexed tightly against his body so his hand was under his face while his right upper arm was at an acute angle from his body and his right forearm extended away from the body as it was at a right angle to the upper arm. In his pubic region there was a mass of string (perhaps a fringed apron) and some of this string passed around his back (perhaps a belt for the

slightly more than a

apron). His upper legs were at right angles to his body and pointed slightly downward, while his lower legs were parallel to his body being *slightly more than* at right angles to the upper portions. The second skeleton, a young adult female, had her *tightly* flexed legs wrapped in a twined blanket, a loop-twist loop net bag placed in her pubic region and the blanket, bag, and flexed legs tied with rope. Then she was placed in a slightly deeper position of the pit on her right side facing the first burial and head to the southeast. Her right arm was flexed against her chest while her left one touched the male burial's chest. Also, the right hand and forearm of the male burial had been laid over her left arm and side. Her flexed bound and wrapped legs were at right angles to her body and they extended between the legs of the male so that the knees rested against the back part of his ilium. The final burial, a child, had been placed in the pit in back of the male. The child, very young (less than 12 months) had been placed in a tightly flexed position on a large twilled mat. Two small baskets, one inside the other, and a net were placed in his lap while two slightly larger decorated bowl baskets were placed on his head. Then a large rectangular mat was wrapped around his body so that it ended in its back region. Then another mat was placed around the head and around the first mat. Finally, a smaller mat was wrapped around the body so that it ended [?] near the front of the body. Next, various strands of string were tied together to make a long rope and in some cases three or four cords were laid parallel and tied to strengthen the rope. Then this burial bundle was laid roughly in the middle of the length of rope. The rope was then wrapped around once and when the portion twisted they were turned 90° degrees and wrapped around in the opposite direction. This process continued until there were seven loops around the body and six up and down the body. The ends were then tied and a small braided simple woven tumpline attached to the whole bundle. It was then laid

in the pit on its left side, the head to the southeast facing the back of the adult male. Next a water bottle made from a gourd, ^{an actual manuscript} and Bat Cave corn was placed southeast of the man's head and then the male and female and a small portion of the child covered by two rectangular twilled mats. After this a large pan-shaped split-stitch bundle foundation basket ^{was placed} over the mat over the pelvis of the male and the knees of the female and another over the child and part of the mat over the male's back. Finally, the pit and burials were covered.

Fig. of burials.

in the pit on the left side, the head to the southwest. In the
back of the right side. Next a water bottle was found a foot, and
but one coin was placed southeast of the car's head and the two
male and female and a small portion of the coin covered by the
rectangular twisted metal. After this a large, irregularly shaped
object, found that passed over the hat over the left side and
the knees of the female and another over the right side and part of the
hat over the male's back. Finally, the air conditioning were covered.

Fig. 10. Details.

1901

1902

Plates.

Before passing on to the other occupation descriptions it seems fitting and proper to pause a moment and consider the implications of this multiple burial. The tumpline on the child bundle burial and the partially wrapped female burial makes one suspect that death was met not in the cave but outside it and the dead were carried into the cave and buried. What is the relationship of the three? The trio, a young male and female and a very young child seem most likely to have been a family group. (It is hoped that eventually blood-type studies of these burials will check this hypothesis).

What is the reason that this family^(?) died together and why were the male and female buried in positions that have ~~obvious sexual or intimacy~~^(social) ~~relationships~~^{intimate relationship} - that is, the arms in fondling position, the female's legs thrust between the male's legs and thrust against his privates^(?). Three explanations seem possible. One is that the family died of disease (and the feces from the same level indicate that diseases such as amebic dysentery were prevalent and that their living quarters were not very sanitary). The position may have been due to the sexual attitudes of Guerra who ^{people} ~~thought~~^{might have} some sort of intimacy or fondness should be carried on not only in this life but into the next. Another explanation is a more melodramatic one. This is that the male and female had incestuously or adulterously given birth to a child and that the mores of the Guerra society were such that when they were caught they had been executed and buried in a manner simulating their crime. The final explanation is that this is some sort of human sacrifice. I feel^{that} the first explanation is the most likely.

Distinctive traits of this component Occupation 8 of the Guerra phase, ^{and} of the Catan and Matamores points, the split-stitch baskets of

both the pan and the bowl type - the latter of which is decorated,
^{the} with Bat Cave corn, the twisted ^{stitch bundle} ~~one of the~~ foundation baskets, the
twined basket-maker-like ^{blanket} ~~basket~~, the simple bags and the woven mats
with rather distinctive types of edges. There are of course string
types and some general scraper types that seem to hold over from
earlier horizons. As we shall see, this Guerra horizon has much in
common with the following phase, ~~which we shall be describing momentarily.~~

Fig. - Distribution of Zone H in the
excavated areas of Romero's Cave.

Overlying the rather thick vegetable layer of Zone I and separating
it from an equally thick and distinctive vegetable layer, Zone G was a
relatively thin layer of ash and charcoal which is termed Occupation 9,
Zone H. This is a relatively small occupation area in the back of the
cave and is only represented by about 80 cubic feet of refuse. There
is one grass pit that extended down from it. Much of the refuse
material seems to have gotten burnt and there are numerous patches of

charcoal. Whether these in part represented hearth areas or just burnt garbage material is difficult to say. In terms of the extent ~~as~~ of the thickness of the strata it would seem to be a very brief occupation, probably not more than a season^{by}. These squash remains and some of the other agricultural remains suggest that it occurred either during the summer or the fall. The small size of the area might mean only a couple of families, in other words a micro band.

The subsistence in spite of the large amount of burning of the strata, is actually represented by a fair number of items. There were 34 unidentifiable bones on this layer. Besides the bones there are a number of tools that might be connected with the chase. These include Matamores and Catan points, an atlatl fragment, atlatl fore-shafts, mainshafts, and part of a spring trap. There also were a few scrapers which could have have been used for preparing the skin of the animals caught in the hunt. Besides this relatively small amount of evidence for hunting there were 465 wild plant remains. I would suspect that this is far from representative of the total number that once existed in the strata and I believe that much of the wild plant material had been burnt off and had become the charcoal of the strata. There are a number of kinds of wild plant material that include a few grains of panicum, a few seeds of wild squash, some opunti leaves and ^{agave} ~~heave~~ croids. The thick and thin choppers may have been the implement which they used to chop up the vegetable material and making it ready for a meal. Agricultural remains are not overly numerous but there is quite a variety. Even from our rather limited sample it would seem that agriculture was a good deal more important than hunting. There are pumpkin and gourd remains, some corn remains, and some evidence of cotton. From the feces we have some evidence that these people

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used peppers and were eating mature beans. Besides subsistence activities there is some evidence that they did quite a bit of weaving. There are a number of kinds of string which are tied into a variety of knots. There are also some fragments of twilled mat. The final item - which is a tumpline - is made from cotton. This cotton was woven probably on a belt loom and was woven by what we call the simple one-over-one-type weave. However, the most important new activity of this horizon is the making of ceramics. These ceramics seems to have been basically coil made and the clay may have been collected from the ^{arroyo} ~~Arroyo~~ bottom. There are small amounts of ^{quartz} ~~quartz~~ temper in it and then seems to have been fired in some sort of kiln with artificial draft; the pottery is fairly hard. Some of the pottery, particularly the black ware, was fired in well-controlled reducing atmosphere. The brown, ^{ed}brush and the plain ware seems to have been fired in less well-controlled atmosphere which was mainly oxydizing. Not many rim sherds were found but there does seem to be some evidence of flat-bottomed bowls as well as ^{jar or water jars} ~~Olla~~ storage fragments. I greatly suspect that none of this pottery was made in the cave but brought in by the occupants to the cave from some other area; exactly where was the village of these people has not been determined.

In terms of cultural relations this Occupation 9 seems to represent a fairly definite break in our sequence, as indicated by the first occurrence of pottery. However, the projectile points, the types of atlatl fragments, the twilled mats, and most of the woven items indicate a great deal of continuity ^{then from} ~~and were~~ the earlier Guerra horizons. In fact this new ^{Mesa de Guaje} ~~misadeguaje~~ component seems to be nothing more than the Guerra type culture plus ceramics.

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cotton was woven probably on a belt loom and was woven by what we

call the simple one-over-one-type weave. However, the most important

new activity of this horizon is the making of ceramics. There

ceramics seems to have been basically soft ware and the clay may have

been collected from the local bottom. There are small amounts of

temper in it and then seems to have been fired in some sort of kiln

with artificial draft; the pottery is fairly heavy. Some of the

pottery, particularly the black ware, was fired in well-controlled

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the Quetzal type culture plus ceramics.

Fig. - Distribution of Zone G, ^{occupation 10} in the excavated area of Romero's Cave.

Zone G, Occupation 10 was another marker layer in our excavation mainly because ^{as} if we dug down, this is where the pod ^{to} sherds stopped. It actually was a fairly extensive layer. In the front of the cave it was mainly composed of charcoal with very few patches of vegetable material. It was relatively thin. In the center part of the cave it was charcoal and reddish brown soil. I believe this colouring of the reddish brown soil is due to the fact that some of the vegetable remains had become partially disintegrated. In the same center area it also began to noticeably thicken. This thickness continued into the back of the cave where this layer was a solid mass of vegetable materials. Pollen studies as well as identification of several vegetable plants would seem to indicate that this was a wet period. ^{one of} The identified ^{change was some} vegetable plant indicative of being wet are ~~some~~ manihot remains. Sticks from this horizon have been dated by Carbon 14 as 1486 B.C. \pm (-M-).

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Other sticks from this layer plus some charcoal from Zone H have also been dated and these give a date of 1690 B.C. \pm -(M-). My personal opinion is that these dates probably represent the very beginning of this Mesa de Guaje phase.

Extending down from this layer was a single grass lined pit that was a ^{cacha} cash pit and contained a large number of corn cobs, and a pit which was filled with charcoal and a few pieces of burned rock. The final pit was a burial pit. The contents of these pits plus the refuse and the estimated refuse from the unexcavated portion of our cave allow us to estimate that this layer contained more than ⁵⁷⁰ 600 cubic feet of refuse. The extent and size of the cave in thickness would seem to indicate that it was occupied by a macro band. The vegetable material and the numerous domesticated plant remains would seem to say that it was a couple of seasons. The numerous pieces of corn certainly suggest that this may have been a place where the farmers lived ^{from} during a corn planting ^{throughout or} and harvesting season.

Sixteen bones - not identifiable - make up our slim evidence that these people hunted. A Mesa stem point as well as Catan and Matamores points, atlatl foreshaft and mainshaft as well as a fragment of a wooden trap and some scrapers seem to be the sort of implements that were ^{concerned with} used in the chase. Much more numerous than the bone remains were 698 wild plant remains. Though there were a wide variety of plants, ^{man-hat} panicum, ^{amaranth} emorom, agave and opuntia have been identified as being in the strata. There are a number of implements that could have been used in gathering wild plants and preparing them for food. These would be baskets, nets, scraper planes, choppers, mullers, and various kinds of bags. Some of the bags and nets and baskets, of course, could also have been used in collecting their agricultural remains. The

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agricultural remains are both numerous and varied. There are long red- and yellow-seeded beans. As far as we can tell, these beans seem to have been picked and prepared for food when the seed was ripe rather than when it was young, as it happened in the earlier horizons. There is a single seed of sunflower, there is a great deal of corn, and many of the cobs show evidence of teocentli intergression. There is also some teocentli grains. Gourds, pumpkin and warty squash seeds, rinds and stems occurred. There also is a string made of cotton. Our food remains from identifiable plant^{and}-bone specimens would seem to indicate that there was very little of any hunting and that their subsistence activities were mainly food collecting with some agriculture, perhaps 55 percent food collecting,~~and~~ 40 percent agriculture, and 5 percent hunting. However, supplementing this rather gross estimate based on garbage we have analyzed ^{and} ~~ten~~ feces from this same layer. The interesting thing about the feces is that they seem to show that these people ^{ate mainly} ~~eat many~~ agricultural plants. ^{Eight} ~~Nine~~ ^{more} ~~ten~~ feces have agricultural remains in them, four have more than one agricultural plant in them, and the other ^{four} ~~five~~ have a single type of plant in them. One feces was found that ^{had} only wild plant remains. Three of the ten with agricultural remains ^{and} ~~had~~ either wild plants or bone. Thus our estimate from the feces remains would somewhat reverse our estimate of the subsistence pattern of these people; it would seem to indicate that perhaps 50 percent of their food came from agriculture and 25 percent from hunting and food gathering. Probably the actual truth of the matter is that, the two sets of data, ~~that is~~ from the feces and the garbage remains should be averaged, ~~and~~ I think this would probably give us a fairly ^{reasonable} ~~decent~~ estimate. It is with this horizon that we found our first manos and metates. These, of course, are definite implements used for grinding up agricultural remains,

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particularly corn ^{kernels} remains.

Beside tools and remains giving us evidence of subsistence activities we have other tools that give us glimpses of other things ^{some} they did. The few scrapers would seem to show that the scraping of skins was not an important activity. We have no wood-working tools but a number of the wooden tools are partially finished or were finished and then broken. Thus these people probably did some wood-working. There is some evidence that the making of chipped stone artifacts was still important at this time. We have a single antler flaker and a number of chips in the refuse, and we also have a new type of tool; ~~that is~~ an obsidian blade. This obsidian blade would seem to indicate that there had been a major shift in their tool-making techniques and that they were making cylindrical polyhedral cores out of obsidian and then striking off the blades from these cores. Again, one of the most important activities was weaving. We have two implements that can be connected with this, one is a pointed wooden stick that may have been used in making baskets and mats, while the other is a clay disk. ^{latter} This may very well be part of a spindle whorl for making string. String made on a spindle whorl of cotton ~~is~~ a single yarn which was ^ZM-twisted, though. There also were strings made of two S-twisted soft yarns and some of these in turn are made into two-cord rope. There is also two ^ZM-twisted ^{made into 2 yarn} hard yarn, cord, two-cord rope, ^{and} three-cord rope, a soft ^{and made of 2}S-twisted string, 2 S-twisted soft or hard yarn cords and some S-twisted yarn made into three-yarn cord rope. Both these strings as well as yacca fibres have been tied into a number of different kinds of knots. They include simple slip knots, overhand knots, square knots, and granny knots. Some of this cord has also been made into nets of 4

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~~Two~~
number of different types. Most of these nets seem to have been
parts of bags belonging to two types: ^{fragment} "a simple laced net and
a simple loop net. One of these nets ^{as well as a piece of woven cloth} may have served as some sort
of a kilt. Other string, mainly the cotton string had been woven on
a simple belt loom. Much of it was plain one-over-one type weave,
but there was some two-over-two type weave. Also woven during this
time period are a number of mats. Most of them were twilled and had
square corners. We also found a large chequer-woven mat with a
square corner. These twilled mats usually had a one-over-one type
^{selvage} Selvage. This type of salvage gave the mats the appearance of having
a distinctive rim around them. Beside mats there were a number of
baskets that had been made both in the form of bottles, ~~in the form~~
~~of bowls and in the form of pans.~~ All of these were the split-stitch
bundle foundation variety and a number of them had been decorated
by weaving stitches of a different colour into them. Small pointed
sticks may have been tool used in weaving and the paint stone may
have been used for ^{mixing paint} dying these stitches. The ceramics were mainly
brown and black wares and are very similar to the ones found in the
previous layer and were made - I believe - in the same way. One
difference is that one of the sherds of black ware has incising in its
interior of its flat bottom. There also are more sherds of the
brushed and plain variety than there was in the previous horizons.
Another distinctive aspect of this layer was its one burial. The body,
which had in its pubic area a mass of roots that may have been tied
in place by a piece of string around the waist, had first been placed
in a tightly flexed position. It had been laid on its back in two
large rectangular mats. Then these mats had been folded over the
head and feet and are overlapped in the stomach region. On top of

number of different types. Most of these nets seem to have been parts of bags belonging to two types: a simple laced net and a simple loop net. One of these nets may have served as some sort of a kilt. Other string, mainly the cotton string had been woven on a simple belt loom. Much of it was plain one-over-one type weave, but there was some two-over-two type weave. Also woven during this time period are a number of mats. Most of them were twilled and had square corners. We also found a large checker-woven mat with a square corner. These twilled mats usually had a one-over-one type selvee. This type of selvee gave the mats the appearance of having a distinctive rim around them. Beside mats there were a number of baskets that had been made both in the form of bottles, in the form of bowls and in the form of pans. All of these were the split-stitch bundle foundation variety and a number of them had been decorated by weaving stitches of a different colour into them. Small pointed sticks may have been tool used in weaving and the paint stone may have been used for dyeing these stitches. The ceramics were mainly brown and black wares and are very similar to the ones found in the previous layer and were made - I believe - in the same way. One difference is that one of the sherds of black ware has incising in its interior of its flat bottom. There also are more sherds of the brushed and plain variety than there was in the previous horizons. Another distinctive aspect of this layer was its one burial. The body which had in its pubic area a mass of roots that may have been tied in place by a piece of string around the waist had first been placed in a tightly flexed position. It had been laid on its back in two large rectangular mats. Then these mats had been folded over the head and feet and are overlapped in the stomach region. On top of

this overlap was placed a small mat from the one side to the other.
Next, the sides were folded over and the whole mass tied by a series of length of strings. Many of these strings had been tied together to make longer pieces of rope. They were bound up in much the same manner as the child burial of Zone I had been tied. Probably during ^{at all moments} while the bundling occurred this bundle tying up of the burial, a shallow cylindrical hole had been dug and it was lined with grass. The burial bundle was then placed into ^{in a sitting position} the grass-lined pit and covered with palm leaves and prickly pear leaves. Next, a large rectangular mat was placed over the leaves and the bundle and over the top of the pit. On top of the mat near the burial ^{feet} scene were placed two large bowl shaped baskets. Just off the mat near the head in the top of the pit were placed two water bottles which were inside a net bag. Finally the pit was filled with refuse and much of this refuse contained corn cobs. Whether this was by accident or ^{inclusion} ^{design} purpose, we do not know.

In terms of cultural affiliation this component, Occupation 10, is the type site for the Meso de Guaje phase. There are a number of interesting resemblances. As has been previously stated, many of weaving techniques and agricultural remains as well as the projectile points seem to be directly derived from the Guerra horizon. The pottery is something new. Much of the black pottery does have ^a resemblances to ^{that of} outside areas, these mainly to the Huasteca, and I cannot help but think that our Mesa black pottery is just a regional variant of Ponce black of the Tampico-Ponico region in the Huasteca. Thus I think that our dates for this horizon probably is also a date for the Ponce horizon.

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In terms of cultural affiliation this component, Occupation 10, is the type site for the Meso de Guaje phase. There are a number of interesting resemblances. As has been previously stated, many of weaving techniques and agricultural remains as well as the projectile points seem to be directly derived from the Guerra horizon. The pottery is something new. Much of the black pottery does have resemblances to outside areas, these mainly to the Huasteca, and I cannot help but think that our Meso black pottery is just a regional variant of Ponce black of the Tampico-Ponco region in the Huasteca. Thus I think that our dates for this horizon probably is also a date for the Ponce horizon.

Fig. - Occupation 11, Zone F in the excavated area of Romero's Cave.

Zone F was a thick brownish layer streaked with charcoal in the front of the cave that lay directly on the charcoal zone G, Occupation 10. Zone F contained what we are calling Occupation~~11~~. As we shall see this more correctly probably should be called Occupation~~s~~11. This layer at about the S 15 profile after being fairly thick in the outer portion of the cave slopes suddenly upward and became noticeably thinner. It also lost its streaky appearance and became very filled with vegetable material. Also at about this point it became separated from the lower Occupation 10 by a cave dust layer which we are calling Zone G1. This layer like the one underneath it ran from the front of the back to the back of the cave and was one of the ones which was fairly easily to discern and also fairly easy to number as to level.

Pollen analysis of some of the material from this zone reveal that it was deposited during a period which was slightly wetter than it is at present. Carbon and vegetable material have been analyzed by Carbon 14 and have revealed a date of 236 A.D. \pm -(M----). The

Fig. - Occupation II, Zone F in the
excavated area of Lamer's Cave.

Zone F was a thick brownish layer streaked with charcoal in the front of the cave that lay directly on the charcoal zone G, Occupation 10. Zone F contained what we are calling Occupation II. As we shall see this more correctly probably should be called Occupation II. This layer at about the S 15 profile after being fairly thick in the outer portion of the cave slopes suddenly upward and became noticeably thinner. It also lost its streaky appearance and became very filled with vegetable material. Also at about this point it became separated from the lower Occupation 10 by a cave dust layer which we are calling Zone G. This layer like the one underneath it ran from the front of the back to the back of the cave and was one of the ones which was fairly easily to discern and also fairly easy to number as to level.

Pollen analysis of some of the material from this zone reveal that it was deposited during a period which was slightly wetter than it is at present. Carbon and vegetable material have been analyzed by Carbon 14 and have revealed a date of 130 A.D. \pm (M----). The

layer itself thinned in almost all of our excavated portions and probably was in most of the unexcavated portions. We have estimated that it contained about 500 cubic feet of refuse. Extending down from this layer were two fire pits, one of which, No. 14, had a large number of burned corn cobs in it. There also was a storage pit Pit 15, and this contained a great amount of vegetable material and then down in the bottom an aligator bag which contained some teocentni seeds. Besides these pits extending down from it, there were five burial pits. Many of these seem to have been dug at just a slightly different time one from the other.

Now let us consider just what sort of an occupation this was. This situation seems to have been somewhat more complex than in our previous levels. I have a feeling that this so-called Occupation 11 represents a series of brief intermittent occupations and ceremonies by small groups of a relatively long period, ^{and} in that the real homes of the occupants were in the ruins on the Mesa above the cave. There are a number of reasons for my believing that this is not one continuous occupation by a macro band which it on the surface appears to be. First of all, we have the thin ^{lenses} ~~landing~~ of charcoal in the outer part of the zone ^{covered} ~~and in~~ the mouth of the cave. This would probably ^{brief} represent a series of very small/occupations which happened to become separated by cave dust. In the back they don't seem to have been separated. Secondly, the burials were deposited at a different time. Burial 3 is very definitely on top of burial 4. These were both dug down from the lower part of the zone. Also, burial 9 was on top of burial 8, and burial ¹ 8 seemed to have actually been dug in part through the original burial pit of burial ⁸ 9. Burial 7 also seems to come from almost above the top of the strata. Thus each one of these

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burials seems to have been made at a slightly different time. Also, ^{with tinplines} the burials all but one, are in pack-boards and the main ceremony in the wrapping of these burials seems to have taken place outside the cave and brought in, in other words, these are not inhabitants of the cave who died during the occupation, but rather people who lived outside the cave and then died and were brought in ⁱⁿ this special burial place. Another factor which makes me believe that this is an intermittent occupation is that we have vegetable materials that seem to represent all periods of the year. Certainly the thickness of the strata in the back of the cave does ^{not} justify it ^{the} in believing ^f that it was a continuous occupation throughout the whole year. Thirdly, as we shall see, this occupational level is a component of the Palmillas culture, and outside the cave the Palmillas culture built most of the large ruins in the area ^{that had large} and it also has a terrific amounts of pottery. In our cave deposits we found a very limited amount of pottery. Thus ^{that the abundant ceramics} it is hard for me to believe/what these Palmillas people used outside ^{little} the cave was used ^{of} ~~approximately~~ in the inside/this cave ~~they~~ used very little. Thirdly, nowhere in this deposit was anything we could honestly call grass bedding. Thus again it looks like this occupation was laid down by a series of visits from the people who were living ^{at the ruins} above. ^{the cave}

Now let us turn to evidence of their subsistence activities. Here we have a very, very adequate sample both of preserved materials as well as a number of portions of feces. Unfortunately only three of these have been analyzed. There were 116 bones and some fragments of skin. Animals which these people hunted included deer, peccary, jaguar, evidently an aligator, and some birds. Implements that might be connected with the hunt are relatively numerous. They include Catan,

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Matamores, San Lorenzo, and Verde arrow points. There also were a number of arrows, foreshafts and mainshafts found in the refuse.

Palmillas, corner-notched, Nogales, Tortugas and Abasolo dart points occur along with a wooden atlatl ^{blunt} ~~but~~, atlatl foreshafts and mainshafts. *Dart remains are still more numerous than those connected with arrows.* Other tools that could have been used in preparing things killed in

the chase are various scrapers and choppers as well as a skin flesher and awl. Thus it would seem these people did some hunting.

However their hunting was nowhere near ^{as important as} their plant collecting activities. In the layer we have 3,264 plant remains. Most of these are huapillas, ~~apuntia~~ ^e and agavia. However, there are wild ^{some} squash seeds, fragments of manihot, amaranths, panicum, tripsicum, as well as many other many eatable wild plants. Implements that could have been used in preparing these wild plants for a palatable dish were mortars and ^{pestles} ~~testables~~. These plants also may have been collected and brought into the cave in baskets and net bags. However, more important than the ~~agricultural~~ food wild plants are the agricultural plants. Here we have a large variety. These include gourd remains, cucurbita mixta, cucurbita moschata, and cucurbita pepo.

In the latter, the pumpkin, there seem to be a number of varieties. There also are many corn cobs, over 2,000 in this layer, and again we seem to have a number of different races of corn. Besides the corn we have a number of grains of teocentli. Some of these teo-
centli grains were set aside especially in ^{an} ~~an~~ ⁱⁿ ~~an~~ aligator bag, pit 15.

Beans are fairly numerous and include a black, yellow, and red seeded variety. There also are a couple of pods of what might be lima beans.

Matamoros, San Lorenzo, and Verde arrow points. There also were a number of arrows, foreshafts and mainshafts found in the refuse. Palmillas, corner-notched, Nogales, Tortugas and Abasco dart points occur along with a wooden atlatl bud, atlatl foreshafts and mainshafts. Other tools that could have been used in preparing things killed in the chase are various scrapers and choppers as well as a skin flesher and awl. Thus it would seem these people did some hunting. However their hunting was nowhere near their plant collecting activities. In the layer we have 3,500 plant remains. Most of these are huapillas, squintia and agavis. However, there are wild squash seeds, ^{some} fragments of manihot, amaranth, panicum, tripsacum, as well as many other many eatable wild plants. Implements that could have been used in preparing these wild plants for a palatable dish were mortars and pestles. These plants also may have been collected and brought into the cave in baskets and net bags. However, more important than the ~~xxxxxxxxxxxx~~ food wild plants are the agricultural plants. Here we have a large variety. These include gourd remains, cucurbita mixta, cucurbita moschata, and cucurbita pepo. In the latter, the pumpkin, there seem to be a number of varieties. There also are many corn cobs, over 2,000 in this layer, and again we seem to have a number of different races of corn. Besides the corn we have a number of grains of teocentli. Some of these teocentli grains were set aside especially in ^{an} aligator bag, pit 15. Beans are fairly numerous and include a black, yellow, and red seeded variety. There also are a couple of pods of what might be lima beans.

Fig. Occupation 11, Zone F in the excavated area of Romero's Cave.

← In the feces we found fragments of chili peppers and sun flowers. Also we found in the garbage fragments of molcajete bowls in which most of the chili and sunflowers ^{seeds} may have been ground. Also, ^{there were} a rectangular cylindrical ^{and} manos ^{fragments of} and metates, which of course could have been used in preparing some of the other food and of course the ^{||}ayas and bowls may have been used to cook these foods in. Besides these eatable domesticated plants we have pipes and cigarets and fragments of tobacco. Also, a fair number of fragments of cotton string was found throughout the refuse and burials. A clay disk may have been part of a spindle whirl which took the original cotton fibre and wound them into string. There also are some cotton ^{and} seeds on this level in the feces ^{and} they may have ^{earthen} been cotton seeds probably to get the grease out of ^{the} it. In terms of the preserved ^{food} vegetable stuff it would seem that we are dealing with

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a horizon that got their subsistence from a 50 percent wild plant, 45 percent agricultural remains and 5 percent hunting. The three feces analyzed, however, reveal a rather different picture. Here all three are full of agricultural materials and all of them have more than two agricultural kinds of plants in them. Two out of the three have some wild plant remains, while two out of the three have some evidence of ^{game (either} bone or feathers or skin). Thus the feces would reveal that probably 60 percent of their food came from agriculture and ²⁰30 percent from food gathering, and ²⁰10 percent from hunting. Again I suspect that an average of the wild preserved remains and the estimate based on the feces probably would give us a fairly accurate picture.

From the garbage and the material associated with the burials we get a fair glimpse of other activities besides subsistence of ~~this group~~. This glimpse ~~actually is not only a glimpse of how they~~ lived in the cave but also probably tells ~~somewhat~~ what their activities were in the ruins above the cave, since we believe that these occupations were only brief visits from these ruins. There is some evidence that they were making projectile points possibly in the cave. The bone flaker, the chips, the numerous projectile points all ^{indicate} point at this. Also, the numerous blades, ^{and} the small fragment of what might be a polyhedral core hint at this, ^{actually}. Again we have a large number of choppers and scrapers. Some of them are made from limestone which ^{walls of the} may very well have come from the cave itself. Thus, perhaps some of their casual activities when they visited the cave was to sit here in this cool place and make chipped stone implements. Another activity was probably their making of various wooden tools. A number of the atlatl foreshafts are unfinished and a fair number of ^{whittled} and cut

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^{occured} sticks throughout the refuse. There also is a fragment of a stone ^(or bark) bark beater that could have been used for wood work. And Besides this there are a fair number of celts which could have been used for cutting up larger sticks, though I would suspect that the use of celts was probably adapted to outside conditions to either cut down the bush for corn fields or to cut up ^{poles} sticks for building houses in ^{their} ^{village or ceremonial center} the ruins. This brings us to another tool making activity, that is the grinding of stones. The celts, the manos, ^{pestles} and the pestles all are ground of stones. This is an entirely new activity which we have not met before. Other activities which may have not taken place in the cave but certainly were done by the Palmillas people was the working of leather. The scrapers, the awl, the flesher and the ^{another} piercer all occurred in the garbage and ~~sort of~~ hint that some leather working was done in the cave. The fragment of an aligator bag, some leather thongs, a jaguar skin belt, two or three fragments of deer skin, and a fragment of a sandal, that is huarachi, all are objects of leather that has been ^{manufactures,} worked.

^{ever-also} However, a ~~much~~ more important activity for these people probably both in the cave as well as in the ruins was weaving. There are a ^{large} terrific number of yacca strands which has been stripped into sections and many of them bear knots. This, of course, would be a primitive kind of string. However, there is in abundance a wide variety of different kinds of string with different numbers of yarn and different kinds of fibres used. This is mainly hand-made. There however are definite cotton threads that were made on a spindle ^{whirl}. Besides the actual twisting the ^{yarns so made} connected strings, a number of fibres were braided together to make strings, a new technique for making^x string. ^{uses} The ~~usual~~ of string, of course, are infinite. Many of them were

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used for tying ~~in~~ Hangman's knots, slip knots, ⁸scranning knots, over-hand knots, square knots and sheep head and ^{locks}heads knots. A number of strings that were used for tying was for making ^{carrying}Kelling loops, and other strings were used for tumplines. Some of the strings, of course, were used for making nets. We have a couple of pointed sticks that could have used to weave their simple loop nets. Some of these nets were hags, and one of them actually was used ^{to the}with a piece of cloth. The pointed stick also could have been used for making baskets. A few of the baskets are twilled mats that had been folded in half and then sewn at one edge. These of course become square baskets. Most of the other basket remains are of the split-stitch bundle foundation variety and are ~~mainly~~ and are mainly bowls.

Another carrying type of basket is what we are calling packboards. Here they are first made two hoops of sticks tying them together; next a large net has been sewn and tied ~~down~~ to each of these hoops, thus making two more or less ^{dip}fish net devices; next the two hoops with the net inside were hinged together by loose ^{strips}mats of yacca, thus making two hoops that fold together with net covers. These could be used as baskets. Most of these hoops, all of which were found associated with burials, have a tumpline from one side to the other at right angles to the hinge section. As may be seen from the codex ^{Mexico}Botorini this type of packboard with a tumpline ^{was}furnishes a common implement among the Oton^m and the Chicinecs ^{ancest}north of ^{the}El Huasteca. It seems to begin to be used in Tamaulipas by at least 300 A.D. However, the most impressive weaving objects are the numerous mats. The basic technique in weaving all these mats is twilling. Many of these mats, particularly those associated with the burial, are between three and four feet wide, and four and six feet long. In this twilling process they have learned the technique of skipping and multiplying

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weave every once in a while ^{and} to change the slope of the twill and ^{the line in turn could form} thereby making a series of geometric squares in the mats. Many of these mats ^{have a very} ^{design} are quite ornate in this process. The older type of mats with special corners are also continued to be used, but the decorated twilled variety are more common. There also is one mat which was ^{in the form of short stemmed T} some sort of a head-dress. This mat is roughly T-shaped and was over the head of one of the burials. The ^{best} ~~fancier~~ weaving was done on some sort of a belt loom using cotton yarn. Two kinds of weaving seems to have been done, one plain weaving - that is one-over-one - and two-over-two twilled weaving. I expect that the weaving of cotton was a fairly important industry. Another activity - which I don't think was done in the cave, but certainly was done by these people we have the result in the cave - was the making of pottery. Though we did not get a great number of sherds in the refuse, we did get some. The pottery ^{has a} ~~is~~ well-knit, ^{paste} ~~is~~ coil-made, ^{has} ~~in~~ small amounts of temper, ^{fine} and seems to be for the most part fired in a special kiln. The simpler wares have plain or brushed surfaces; but there are some fragments of very nice pots of either ^{red, black or plain} polished surfaces or slipped surfaces with ~~red or black~~ polish. We have little evidence of decoration but there are a few sherds that have engraving cut through their outer polished and slipped surfaces. Three or four sherds seem to come from ^{molcajete} Molchee and had geometric incising on their interiors. Even with our limited sample of sherds it was easy to see that these people were making a variety of vessel forms. We have fragments of water jars, plates, bowls with or without ^{slab} feet, and jars with or without handles as well as effigy jars, often shaped in a human or animal head. There also are a whole series of clay pipes, ^{from which} ~~fragments~~, most of them ^{seem to have been} ~~are~~ of the platform variety and relatively small. These were also hand-modelled and made of an extremely fine paste of clay.

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There is one fragment of a mold-made figurine showing that they had still another technique of ^{manufacturing} ~~molding~~ pottery.

This mold-made figurine plus ~~other~~ material with the burials and the refuse give us some hint as to what their wearing apparel was. Around their waist they seem to have had kilts which were open at the front, in other words a rectangular piece of cloth wrapped around the waist like a towel with the opening in the front. Holding this kilt ^{up} ~~up~~ ^{and} they had belts. One of our belts is of threaded beans and bird-bone beads ^{while another is} on a piece of jaguar skin. ^{Some} In ~~one~~ of our leather thongs, ^{you can see} and ^{so-called woven} ~~in one of our tumpline~~ ^{may} there also have been belts. This kilt was open in the pubic region and on two of the burials we have lodged a sort of fringe of root fibres that hung down from the belt over the opening in the pubic region. Some of the figurines from the ruins of the same culture seem to display a similar wearing apparel. We have a number of bird bones and shell beads and a fragment of a gorget with our burials. ^{There use may be seen} On the figurines ^{where} there are obvious necklaces ^K and bracelets ^{medallion}. Also the figurines have ear plugs which we did not find in any of the cave remains but certainly some of the people might have worn such. Many of the figurines also are bare-footed but a few of them have some sort of a sandal, and our single fragment of our huarchi may have been the sort of wearing apparel depicted in the figurines. One additional fragment of wearing apparel is the T-shaped twilled ^{mat} found on one of the heads of one of the burials. The stems of ^{the head of} the T ^{(on} its horizontal parts) ~~seem to have extended~~ down from the head ^{past} to the ears and draped over the chest while the base of the T seems to have been quite wide and ran across the top of the head. Some of the figurines also show some sort of more inverted conical type caps, and some have turbans. We found no evidence of this in

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our cave remains. The final activity in the cave was the burying of the dead. As I have stated before, they were buried in at least three different times, and maybe all five of the burials were buried at five different times. Also, one of the treasure hunters' holes had in its back shelf a fragment of a packboard and a piece of net. Thus I suspect that probably another burial occurred in this layer. The skeleton that were ^{Panero} ~~marrow~~ analyzed from this cave, may have been this burial. All but one of these burials have some features in common.

All of ~~them~~ are in pits and under large slabs of rock. Four ^{probably} and the fifth that had been looted) were ^{with a dump-line} ~~probably~~ in packboards. These five

burials seem to have been flexed and then wrapped in a series of mats, ^{which was tied by string, rope and/or yucca strands} ~~which was~~ From ~~hereon~~ ^{however} each one seems to have some individual features. The

looted one and burial 8 have no accompanying remains and also were in

rather poor condition. Burial 9 had a fragment of a water bottle and

wound stick in the pubic area in it. Burial 7 had a cotton cloth

kilt, some pubic fibres and a leather belt. Burial 4 had a twilled

bag filled with fibres, string and an awl, a pubic ^{string} ~~string~~, a net kilt,

a threaded bean and bird-bone ^{belt} ~~bag~~, a gorget, and a T-shaped head dress.

The other burial, No. 3, was rather different. It was in a pit, over-

lapping over burial 4, and it was poorly preserved. It had been covered

by a large mat; it was in a flexed position, but the head was missing.

There were a large amount of pubic fibres and string around pubic

area, perhaps showing that it too had a kilt. In place of the head

there ^{were} ~~was~~ again a mass of fibres had been placed. Sticking in the

ribs was an arrow and there were a number of other arrow shafts in

the same pit that may have been pierced in the body. This certainly

looks to have been some sort of a human sacrifice. As has been ^{Otomi burials} ~~there are drawing of human sacrifices~~ stated before, in the Aztec codices the ~~last right of the chief to~~ }

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our cave remains. The final activity in the cave was the burying of the dead. As I have stated before, they were buried in at least three different times, and maybe all five of the burials were buried at five different times. Alas, one of the treasure hunters' holes had in its back shelf a fragment of a packboard and a piece of net. This I suspect that probably another burial occurred in this layer. The skeleton that were narrow analysed from this cave, may have been this burial. All but one of these burials have some features in common. All of them are in pits and under large slabs of rock. Four and the fifth that had been looted were probably in packboards. These five burials seem to have been flexed and then wrapped in a series of mats. From hereon each one seems to have some individual features. The looted one and burial 8 have no accompanying remains and also were in rather poor condition. Burial 9 had a fragment of a water bottle and wound stick in the pubic area in it. Burial 7 had a cotton cloth kilt, some pubic fibres and a leather belt. Burial 4 had a twilled bag filled with fibres, string and an awl, a pubic string, a net kilt, a threaded bean and bird-bone bag, a gorget, and a T-shaped head dress. The other burial, No. 3, was rather different. It was in a pit, overlapping over burial 4, and it was poorly preserved. It had been covered by a large mat; it was in a flexed position, but the head was missing. There were a large amount of pubic fibres and string around pubic area, perhaps showing that it too had a kilt. In place of the head there was again a mass of fibres had-been placed. Sticking in the ribs was an arrow and there were a number of other arrow shafts in the same pit that may have been pierced in the body. This certainly looks to have been some sort of a human sacrifice. As has been stated before, in the Aztec codices the Aztec right of the chief to of the burial practices which seem to have been in this

In terms of cultural affiliation it is obvious that at this occupation level we have a very new and different group. ^{as there are many} ~~New materials~~

^{examples of above} and types of artifacts are extremely numerous. The Palmillas corner-notched point, the ^{verde} ~~Gary~~ ^{the arrows} (?) point, the clay platform pipe, the complexly woven mat, the ~~fermy~~ packboards and packboard burials, the ~~first~~ ^{new} variety of agricultural plants are distinctive aspects of this component of the Palmillas phase. Scrapers, some of the simpler weaving techniques ^{well as} and many of the string types as the atlatl types and various of the Abasolo, Nogales and Tortugas projectile points show continuity from the earlier level. However, we have something very new and different here. Also, the amount of rather specialized material would

seem to hint that for the first time at this occupation level we have a culture which ^{may have} had some sort of full-time specialists and probably ^{as} markets ^{seen to} in a number of implements ~~they~~ have been traded in for considerable distances. Thus we have an urban or semi-urban cultural representative ^{ed} at this time period about 300 A.D. ⁻⁷⁰⁰⁻ Directly above this

^{new for} layer in both the front and the back of the cave we have a white ash ^{have been} and cave dust layer which is Zone ~~F~~ Fl. It does not seem to ~~be~~ an occupation layer though we found occasional points and occasional pot sherds in it. This ~~again may have been~~ from the people who ~~were living in the ruins above.~~ Above this layer we have a burnt charcoal strata. ⁱⁿ ~~In the front of the cave it is called Zone E,~~

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In terms of cultural affiliation it is obvious that at this occupation level we have a very new and different group. New materials and types of artifacts are extremely numerous. The Palmillas commonly notched point, the Gary(?) point, the clay platform pipe, the complexly woven mat, the fancy packboards and packboard burials, the first variety of agricultural plants are distinctive aspects of this component of the Palmillas phase. Scrapers, some of the simpler weaving techniques and many of the string types as well as the stilt types and various of the Abasco, Nogales and Tortugas projectile points show continuity from the earlier level. However, we have something very new and different here. Also, the amount of rather specialized material would seem to hint that for the first time at this occupation level we have a culture which had some sort of full-time specialists and probably markets in a number of implements they have been traded in for considerable distances. Thus we have an urban or semi-urban cultural representative at this time period about 300 A.D. Directly above this layer in both the front and the back of the cave we have a white ash and cave dust layer which is Zone F. It does not seem to be an occupation layer though we found occasional points and occasional pot sherds in it. This again may have been from the people who were living in the ruins above. Above this layer we have a burnt charcoal strata. In the front of the cave it is called Zone E, Occupation 12. It also seems to be of the Palmillas culture, and here I believe, we have a single seasonal occupation by Palmillas people. Most of the strata is burned charcoal.

^E
Fig. - Occupation 12, Zone in the
excavated area of Romero's Cave.

This charcoal strata, Zone E Occupation 12, was mainly in the front of the cave and was composed of only about 40 cubic feet of refuse most of which was ^{domestic} corn ash. However, pit 16, which extended down from it, was filled with vegetable material and was grass-lined as if it was a bed. Also, pit 3 was mainly a large hearth area filled with a great deal of charcoal and burnt rock. It did have some burnt vegetable material in it. Due to the small size of the occupation area plus its limited ~~amount of~~ thickness I would guess that it was occupied by a micro band for a very short season and the squash remains would again indicate that this season was either part of the late spring or part of the early summer.

Now turning to the remains that tell us something about their subsistence activities we first had 110 badly charred bone fragments, ^{which} ~~in other words~~, ^{not} were identifiable. We also had two rather large bones both of which were uncharred and seemed to have come from a deer. Implements connected with the chase are almost as numerous as the bone material as far as bulk is concerned. In this refuse were *varle*, Abasolo, Tortugas, Matamores and Catan points, all of which may have

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of an arrow foreshaft. A discoidal scraper and a cane knife as well
as thin flake scrapers may have been used in preparing the ^{skins of} animals
killed in the chase. Much more numerous than the bones remains were
the wild plant remains which number ~~XXX~~ 1,436. These include agave,
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the remains of agriculture. There were over 1,000 corn cobs, many of
which came from pit 16, there are pods and seeds of four varieties of
beans, there are warty squash and pumpkin remains, there are some clay
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had about 150 sherds many of them were quite small; however ~~five~~ ^{beside}
brushed and plain sherds we did have some polished ^{red} and polished black
that had engraved designs cut through them. Thus our ceramic complex
is very much like that of Occupation 11. On the basis of the ceramics
and the points and the vegetable material I think we are safe to conclude
that this was a temporary occupation, perhaps during a corn harvesting
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been used with atlatla, Vento and San Lorenzo arrow points and part of an arrow foreshaft. A discoidal scraper and a cane knife as well as thin flake scrapers may have been used in preparing the animals killed in the chase. Much more numerous than the bones remains were the wild plant remains which number ~~XX~~ I, 436. These include agave, opuntia and wild squash. The chopper, the scraping planes and the mullers all may have been used in preparing these very numerous remains. Almost as important as the wild vegetable materials were the remains of agriculture. There were over 1,000 corn cobs, many of which came from pit 16, there are pods and seeds of four varieties of beans, there are warty squash and pumpkin remains, there are some clay pipes, cane cisterns and a possible tobacco leaf. There was in the feces a couple of pepper seeds, and much of a string that was made of cotton. The only other activity that there is any indication of is the numerous fragments of string and pottery remains here. Though we had about 150 sherds many of them were quite small; however five brushed and plain sherds we did have some polished^{red} and polished black that had engraved designs cut through them. Thus our ceramic complex is very much like that of Occupation II. On the basis of the ceramics and the points and the vegetable material I think we are safe to conclude that this was a temporary occupation, perhaps during a corn harvesting season by a micro band of people who had probably this type of culture.

Fig. - The Distribution of Zone D, Occupation 13,
in the excavated levels of Romero's Cave.

Above these levels of relatively poorly preserved vegetable material which were filled with ash and charcoal ~~we came onto~~ ^{we came to} a big, thick layer of well preserved food stuff from the front of the cave to the back of the cave. In the front of the cave ^{of} this layer it is often one foot thick while in the back it may be only three or four inches. This lowest well-preserved vegetable layer is called Zone D, Occupation 13. It has been estimated to include about 618 cubic feet of preserved refuse material. The pollen from this layer as well as the bone material and the preserved vegetable stuff indicate that we are again dealing with a ~~culture~~ period that was as dry as it is at present. In two or three little patches, within this well-preserved vegetable layer, ~~there~~ ^{with the rock} were burned areas and ~~burned~~ rock which might be interpreted as being hearth areas. However, besides these possible hearth areas there were six very definite pits. Two of these pits were ^{completely} ~~perfectly~~ lined with grass perhaps for beds. Two of the other ones

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Above these levels of relatively poorly preserved vegetable material which were filled with ash and charcoal we came into a thick layer of well preserved food stuff from the front of the cave to the back of the cave. In the front of the cave this layer is often one foot thick while in the back it may be only three or four inches. This lowest well-preserved vegetable layer is called Zone D, Occupation 13. It has been estimated to include about 618 cubic feet of preserved refuse material. The pollen from this layer as well as the bone material and the preserved vegetable stuff indicate that we are again dealing with a culture period that was as dry as it is at present. In two or three little patches within this well-preserved vegetable layer there were burned areas and buried rock which might be interpreted as being hearth areas. However, besides the possible hearth areas there were six very definite pits. Two of these pits were perfectly lined with grass perhaps for beds. Two of the other ones

which were also vegetable lined contained ~~mats in them~~ and sleeping mats. Thus I think we can safely say that there were four beds within the area. Another pit was filled almost entirely with corn cobs while a final pit was filled with vegetable materials. Much of ~~it~~^{the food stuffs} looks like they have been put in there quite purposely and a number of wooden artifacts were with them. From the basis of this thick vegetable material as well as the kinds of plant remains that we found in it I think we may safely estimate that a macro band lay down this layer in a seasonal occupation. The squash remains and some of the plant remains would seem to indicate that they occupied this layer and ^{it} deposited/during the spring and summer months.

^{stratum}
141 bones occurred in this ~~layer~~ and there were a number of identifiable bones, some of these are deer, ~~there are~~^{are} a few of peccary, a couple of rats, there is one bone that is very definitely a buffalo, and one tooth that might be of a dog. Actually this ~~is not~~^{does represent} a great deal of ~~bone meat~~^{material}. However, the implements associated with the hunt and with the preparation of meat are very numerous. These include both thick and thin scrapers as well as elongate scrapers. The discoidal scrapers and small triangular end scrapers that were probably hafted in some sort of cylindrical sticks. All of these could have been used to prepare ^{hides} ~~skins~~ as well as fix meat. Projectile points were quite numerous and include atlatl points of the types called Abasolo, Nogales, Tortugas, Palmillas, Verde, Matamores and ^{La} Betan. There are a couple of fragments of atlatl foreshafts and a few possible fragments of mainshafts. However, at this time much numerous than the atlatl remains are points and mainshafts of arrows. The points belong to the Jaumave, ^{Frenos} ~~phases~~^{and} in San Lorenzo types. ~~Besides these waves of~~^{also} animals, there are at least two pieces of small spring traps. However, as said before, most

which were also vegetable lined contained mats in them and sleeping mats. Thus I think we can safely say that there were four beds within the area. Another pit was filled almost entirely with corn cobs while a final pit was filled with vegetable materials. Much of it looks like they have been put in there quite purposely and a number of wooden artifacts were with them. From the basis of this thick vegetable material as well as the kinds of plant remains that we found in it I think we may safely estimate that a macro band lay down this layer in a seasonal occupation. The squash remains and some of the plant remains would seem to indicate that they occupied this layer and it deposited during the spring and summer months.

All bones occurred in this layer and there were a number of identifiable bones, some of these are deer, there are a few of, possibly, a couple of rats, there is one bone that is very definitely a buffalo, and one tooth that might be of a dog. Actually this is not a great deal of bone material. However, the implements associated with the hunt and with the preparation of meat are very numerous. These include both thick and thin scrapers as well as elongate scrapers. The discoidal scrapers and small triangular and scrapers that were probably hafted in some sort of cylindrical sticks. All of these could have been used to prepare skins as well as fix meat. Projectile points were quite numerous and include atlatl points of the types called Abasco, Nogales, Tortugas, Palmillas, Verde, Matamoros and Petan. There are a couple of fragments of atlatl foreshafts and a few possible fragments of mainshafts. However, at this time much more numerous than the atlatl remains are points and mainshafts of arrows. The points belong to the same phase as the shafts of arrows. Besides these there are of course animals, there are at least two pieces of small spring traps. However, as said before, most

of the layer was composed of vegetable material and we counted and classified 7,709 vegetable remains. This probably represents about two-thirds of all that occur. Among these remains are the ~~side-occupation~~ cactus ~~and~~ agave and huapillas. There were some remains of wild squash ~~and~~ wild runner beans and amrath(?). ^{Tools} ~~Foods~~ which might have been used in preparing these plants were scraper planes and various saw-like choppers. Again, we have a ~~fair~~ variety of agricultural remains but not so great as in the previous horizons. There are gourds, pumpkins, warty squash and remains of the small walnut squash. There are at least three kinds of beans as well as lima beans, two or three varieties of corn, and teocentli. Though we found no actual tobacco leaves, an effigy pipe and various cigarette butts would seem to indicate that such were used. Cotton occurred but was extremely rare. In terms of the garbage remains they would seem to have been primarily plant collectors who did quite a bit of agriculture and little or no hunting. The two feces examined would tend to back this up. Both of these had as many ^{wood} fragments of wild plants in them than they have of agricultural plants, and only one of them had a small piece of crushed ^{bone} shell. Other activities besides subsistence show that they did some chipping of flint and still made obsidian blades from polyhedral cores. ^{antler} The/flaker may have been one of the tools they used in chipping a flint. The scraping of skins seemed to have been an important industry as we have fragments of sandals and some deer skins, we also have some split conical wedges and plain wedges that may have been used to tie down the skin while it was being scraped ^{by} ~~discarded~~ and ~~longer~~ and ~~scrapers~~

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of the layer was composed of vegetable material and we counted and classified 7,709 vegetable remains. This probably represents about two-thirds of all that occur. Among these remains are the sides of cactus and agave and huskies. There were some remains of wild squash and wild runner beans and amaranth(?). Foods which might have been used in preparing these plants were scraper planes and various saw-like choppers. Again, we have a fair variety of agricultural remains but not so great as in the previous horizons. There are gourds, pumpkins, warty squash and remains of the small walnut squash. There are at least three kinds of beans as well as lima beans, two or three varieties of corn, and teocentilli. Though we found no actual tobacco leaves, an elliptic pipe and various cigarette butts would seem to indicate that such were used. Cotton occurred but was extremely rare. In terms of the garbage remains they would seem to have been primarily plant collectors who did quite a bit of agriculture and little or no hunting. The two feces examined would tend to back this up. Both of these had as many fragments of wild plants in them than they have of agricultural plants, and only one of them had a small piece of crushed shell. Other activities besides subsistence show that they did some chipping of flint and still made obsidian blades from poly-anthel. The flaker may have been one of the tools they used in chipping a flint. The scraping of skins seemed to have been an important industry as we have fragments of sandals and some deer skins, we also have some split conical wedges and plain wedges that may have been used to tie down the skin while it was being scraped. Like in the previous horizons weaving is an important industry.

There were a large number of fragments of string but the string is somewhat different ^{from that of} ~~than~~ ^{as} in the previous horizons ¹ for most of it is S-twisted hand-made yarn and there is very little spindle made cotton yarn. This yarn ^{is seen} ~~was~~ twisted in various ways to make different kinds of cord. Again in this horizon we seem to have a wide variety of knots both ties ^{on} and string and ^{strands of} ~~willows in~~ ^{yarn} the upper strands. ^{which some of} From this string ^{was} ~~used for tying~~ ^{much of} we find ~~that~~ the strings were used to make knotless and simple-looped nets as well as a simple-loop net with a ~~larger~~ foundation. There is one fragment of a plain cotton-woven cloth that was made on a belt loom with one ^{warp} ~~wart~~ and one ^{weft} ~~weave~~. Mat fragments are fairly numerous and there are a couple of whole mats. ~~Most~~ of them come out of our sleeping pits. All of these are twilled but they are extremely different from those of our previous horizons. ~~with~~ ^{if} their ~~is that~~ fancy decorations made by skipping elements while twilling are almost entirely absent. The small pointed wooden stick may have been used in ^{weave} ~~twilling~~ these implements. ^{They} It also may have been used in making their split-stitch bowls. ^{shaped bowls} These bowls again are not so well made nor so tightly woven as either ^{those of the} Palmillas or Mesa de Guaje horizons. One piece of turtle shell had been pierced and may have served as a rattle. ~~Which~~ The most numerous cultural items from this horizon was the pottery. Though there is some pottery that seems to carry on from previous horizons most of it is ^{of} new and different types. This pottery like that of the previous horizons is coil-made, but the paste is more poorly knit and the temper is larger. It also has been fired in relatively poorly controlled oxydizing atmosphere. The predominant surface finishes are brushed and crudely smoothed. However, there are some surfaces that are smudged black and a few that are ^{corrugated} ~~coiled~~. Rarely ^{though one type has crude engraving on it} are there any decorations on them. The vessel forms seem to be limited to relatively simple bowls without vessel ^{feet} ~~sort~~ and ^{wide} ~~large~~ mouth

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without handles.

jars. The general appearance of the pottery give the impression that we are now dealing almost entirely with service utilitarian ware. ~~We~~ *small* have no ceremonial ware or fine specialized ware.

In terms of cultural relations Zone D, Occupation 13 is our first component of the San Loranzo phase. This phase differs from previous ones in having a number of small side-notched and triangular arrow points, many more arrows than atlatls, in having the crude San Lorenzo type corrugated and black ware and crudely engraved pottery. They also had simple twined mats only. ^{There are} ~~The~~ various types of scalloped ^{edged leather} sandals ~~also and seem to be somewhat distinctive of it.~~ There are of course many hold-overs from the previous horizons both in projectile points and scraper types as well as the more general string types and some of the wooden tools. However, we have a very different horizon from Palmillas and what evidence we saw of specialized craftsmanship ~~is~~ ^{or} possibly full-time specialists in the Palmillas horizons seems to be totally lost ^{by} ~~in our~~ San Lorenzo ^{times} ~~sample.~~

Fig. - Distribution of Zone C, Occupation 14,
in the excavated levels of Romero's Cave.

Usually capping the vegetable layer Zone D was a very thin, half an inch thick ash layer, called Zone D-1. This underlay another relatively

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Usually capping the vegetable layer Zone D was a very thin, half an inch thick ash layer, called Zone D-1. This underlay another relatively

thick vegetable layer which was in the middle part of our excavated area. This vegetable layer that looked so very much like Zone D was called ~~Zone~~ C and Occupation 14. It was somewhat less extensive than our previous one and only was composed of 265 cubic feet of refuse. Its features were not too numerous. There was one pit filled with fire-cracked rock and charcoal, ~~extending down from it another~~ ^{one} grass-lined pit or bed, a grass lined pit with a mat inside that definitely was a bed, and there was a large depression in the west part of our excavation that was filled with grass and seems to have been part of this layer. ^{The latter} It may have in part been caused by some of the treasure hunting excavation. In terms of the thickness of the layer and fireplace, and so forth, I would guess we are probably dealing with a macro band who was here for about a season.

During their stay in this season they did a little hunting. We found 119 unidentifiable bones. We found a few identifiable deer bones, a couple of jaguar bones, ~~....~~ ^{rat} bones, and some bird bones. There also was a fragment of deer skin and jaguar skin. Implements that might be connected with the hunt were fairly numerous. Dart points include Abasolo, Nogales, Palmillas, Verde, Catan and Matamores types. More numerous than these were arrow points which include San Lorenzo, Jaumave, Fresno and Starr. There also are a large number of arrow main shafts and foreshafts ~~found~~ ^{one stratum had}. Wild plants are extremely numerous and here we counted all of them; ~~it was~~ ^{it was} 7,274 wild plant remains. Among these wild plant remains are some fragments of ^{wild} squash, runner beans, amaranth ^N as well as numerous desert plants like cactus and agave, huapillas and the like. Some of our choppers and hammers may have been used to mash up these wild food remains. Almost as numerous as the wild plant remains are agricultural remains. However, there is one

thick vegetable layer which was in the middle part of our excavated area. This vegetable layer that looked so very much like Zone D was called Zone C and Occupation 1A. It was somewhat less extensive than our previous one and only was composed of 265 cubic feet of refuse. Its features were not too numerous. There was one pit filled with fire-cracked rock and charcoal, extending down from it another grass-lined pit or bed, a grass lined pit with a mat inside that definitely was a bed, and there was a large depression in the west part of our excavation that was filled with grass and seems to have been part of this layer. It may have in part been caused by some of the treasure hunting excavation. In terms of the thickness of the layer and fireplace, and so forth, I would guess we are probably dealing with a macro band who was here for about a season.

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difference. Though we have quite a wide variety the numerous different varieties ^{of domesticated plants} in races which we had in Palmillas seem to be gone. We still have gourds and a couple of varieties of pumpkins as well as warty squash. There are still four varieties of beans, but the lima beans are absent. There are a large number of cobs of corn, but most of them seem to be of a race called Breve de Pidlla. Cotton again occurs in some of the string and there are a few little fragments of peppers. No tobacco leaves were found but we have some cigarette butts and part of an effigy of an elbow clay pipe. I think the conclusion that these people were plant collectors who did almost as much agriculture as they did plant collecting and a little hunting, is a fair estimate of their subsistence activities. The antler flaker and the chips would seem to indicate that these people did some chipping while they they were living

in the cave. ^{the scrapers} of a conical wedge for holding down ~~scribble~~ skin with the ^{ulna punch} scrapers. The ^{jaquar skin} omapodge(?), the Chatiguaf(?) and the shoe fragment would seem to show that one of their activities while in the cave was ^{preparing hides} fixing ^{the} skin. Spoke shaver, the pointed stick and various whittled objects seem to show that they did some wood working. ^{Example of} The String ^{are} is not overly numerous. Most of it is S-twisted and done by hand and not spindle whirl. This is true of both cotton and hard or soft wild fibres. There are a ^{cotton} few pieces of yarn that were done with a spindle whirl. Some of the string was made into simple loop nets, others were woven on a belt loom into cotton plain weave. No basket remains were found but there were two fragments of twilled mats, and one extremely small fragment of chequer-weave mat. One of the twilled mats seems to have a decorated border. However, for the most part they are plain. There also were found a few ^{painted} ~~peanut~~ fibres in this layer that may have ^{be interpreted as indicating} meant that we had some twilled mat that had a painted design ^{on} element in them.

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had some twilled mat that had a painted design element in them.

As far as cultural affinities are concerned this group definitely ties in with Occupation 13. It is considered to be another perhaps smaller component of the San Lorenzo phase. The numerous pot sherds, which are mainly brushed and smudged ware although there are ~~many Sam~~ ^{and irregular sherds} ~~corregated features still available~~, are a further link. This ceramic activity is probably our best reason for tying them in with the previous culture.

Fig. - Distribution of Zone E, Occupation 15,
of the excavated layers of Romero's Cave.

~~Over~~
Of all the cave dust layer called D-1 and in part above Zone C was another thin layer of vegetable material in the back of the cave. This seems to have extended in fairly large amounts into the unexcavated portion. However, as far as our excavation is concerned there was little more than 25 cubic feet of refuse in this layer. Extending down from this layer was one grass-lined pit with a mat in it, and throughout the layer were patches of charcoal that may or may not have been hearths. On the basis of the thinness of the layer and the relatively small occupation I would guess that this is an occupation by a nomadic micro-band. The squash remains would seem to indicate that perhaps it ~~could~~

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took place during the summer.

We have considerable evidence concerning their subsistence activities. Only twenty-five unidentifiable animal bones were uncovered and there was one identifiable deer ^{flake}~~bone~~ and a piece of deer skin. Artifacts that might be connected with the chase were the atlatl point of the Abasolo, Nogales, Mesa and Verde's types. However, much more numerous than atlatl points were the Catan, Matamores, Fresno, Starr ^{Sar} and Antonio side-notched arrow points. There also were numerous main shafts and foreshafts. Much more numerous than the evidence of hunting was that of wild plant collecting. 2,842 wild plant remains were uncovered. Many of these were Huapillas leaves and ^{ems}steeks. There were a few agave, cactus and chewed quits of other wild plants as well as a few wild squash seeds. The only implement that seems to be connected with wild plant collecting ^{(except} ~~except~~ for the obvious nets) were thick and thin saw-like choppers. Agricultural remains also occur but are less varied and less numerous than in our previous horizons. There are only two varieties of beans; there are a number of cobs of corn but most of them seem to be of the Brevide ^{P. dilla} Tidile race corn. There are a few strings made from cotton. Tobacco also occurs. The ^{gourd} ~~frag~~ fragments are fairly numerous but this does not seem to have been a food as we found ^{none of} these seeds in the feces. A single variety of pumpkin and warty squash also occurred. The only objects that might even vaguely be connected with agricultural remains are the pottery, particularly the ~~charred~~ ones that seems to have been used for that had burned food material adhering to their interiors. We also have a shell spoon that may have been used for dipping out some of this soup. Skin scraping activities evidently occurred during this brief occupation. The hammered wood wedge may have been used to stake down skins, the

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thick and thin flake scrapers, ^{side} may have been used for removing some of these fatty tissues as well as the crescentric end-scrapers. There also are antler piercers that could have been used to ^{piece} cut the skin. We actually did find a number of fragments of skin, some being leather thongs, others merely pieces of deer skin with or without the hair attached and also one fragment of a huarachi². As with the other horizons there are numerous pieces of string; most of it is S-twisted and soft fibres. A little ^{cotton} cord still appears. Some of the string ^{and yacca strings} was of course tied into a variety of knots. ~~Also yacca strings were tied into a variety of knots.~~ Some string was used for making simple loop net while other strings were used on a loom to make tightly twined ~~rope~~ blankets. There also is one single fragment of a piece of double cloth; it is decorated with an indigo blue ^{ye} dye. This piece of double cloth of course infers a much ^{more complex} finer type of loom weaving. It of course ^{however} may be an ~~actual~~ ^{manufactured in another} trade piece ^{on this} into the area. Simple twilled mats occur with squared corners ~~in it~~ and there is one chequer mat. There is also a ~~bones~~ ^{matto} and a fragment of paint dish which may have been used ^{coloring} for decorating. Pot sherds are fairly numerous. The fancier variety ^{fibers} ~~is of~~ ^{engraved} ~~of~~ ^{as} ~~black~~ burnished ware, and the earlier brown burnished ~~ware~~ seemed to have totally disappeared. Though brush and corrugated wares continue. However, there are two new types: San Antonio red ware and San Antonio polished ware. Vessel forms like in the previous horizons are quite limited to a few simple bowls and a few simple water jars without any appendages or decoration. There are also a number of sherds which are trade of Huateca black and white. On the basis of the above evidence it would appear that we have a new culture entering the area, so we consider Occupation 15 to be a component of the San Antonio phase. The San Antonio projectile points,

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the crescentric end scrapers, the shell spoon, the twined rope, the double cloth, the San Antonio red and polished pottery all are diagnostic of this new culture. Other traits in the form of choppers and strings seem to be a continuation of the previous horizons.

Fig. Zone A, Occupation 15 in the excavated area of Romero's Cave.

Overlying the thin layer of cave dust in the front of the back of the cave, in the back Zone B-1 and in the front Zone C-1 was a thick vegetable layer which underlay cave dust on the surface of the cave. This top vegetable ^{Zone} ~~layer~~ is called Zone A and was very extensive. I suspect also that our material could have dug both by treasure hunters and by the San Antonio people themselves. It is estimated there over 600 cubic feet of refuse in this ^{stratum} area. There were three fire pits dug down from it, one grass lined pit and one burial pit. There are also numerous areas of patches ^{of grass} ~~that might have been beds~~ and a couple of mats lying horizontally in the layer that also may have been beds. On the basis of this I would suspect that here we are dealing with a macro band who occupied this cave for a couple of seasons, perhaps in the spring and the summer. 246 unidentifiable bones occurred as well as identifiable bones of deer, peccary, rats and birds. There were also

the crescentic and scarpers, the shell spoon, the twined rope, the double cloth, the San Antonio red and polished pottery all are diagnostic of this new culture other traits in the form of choppers and strings seem to be a continuation of the previous horizons.

Fig. Zone A, Occupation I5 in the excavated area of Romero's Cave.

Overlying the thin layer of cave dust in the front of the back of the cave, in the back Zone B-1 and in the front Zone C-1 was a thick vegetable layer which underlay cave dust on the surface of the cave. This top vegetable layer is called Zone A and was very extensive. I saw - good also that our material could have dug both by treasure hunters and by the San Antonio people themselves. It is estimated there over 600 cubic feet of refuse in this area. There were three fire pits dug down from it, one glass lined pit and one burial pit. There are also numerous areas of patches that might have been beds and a couple of mats lying horizontally in the layer that also may have been beds. On the basis of this I would suspect that here we are dealing with a macro band who occupied this cave for a couple of seasons, perhaps in the spring and the summer. 240 unidentified bones occurred as well as

a number of pieces of skin. In ~~.....~~ these remains were more numerous than the bones themselves ^{where} ~~when~~ many implements that might be connected ~~with the point~~ with hunting. These include Abasolo, Nogales, Tortoguas, Verde, atlatl points as well as atlatl mainshafts, and foreshafts. More numerous ^{Cactus,} ~~than Catan~~ were Matamores, San Lorenzo, Jaumave, Fresnos and San Antonio arrowpoints. There also was part of a bow and arrow mainshafts and foreshafts. There also were scrapers which would be somehow connected with hunting. Much more important than this activity, however, was wild plant collecting. Though we had 9,361 wild plant remains that were counted, there actually were a number more that were not counted. Most of these were desert cactus and ^uyacca remains, but there were some wild squash ^{fragment with} in them. The crescental flat and humped scraping planes and saw choppers could have been used to prepare these remains for food. ~~Somewhat less and~~ ^{more than} still an important activity was agriculture. ^{were many seeds of} There ~~is lots of~~ corn, most of ^{it} ~~ix~~ Breve de Padilla variety; there ^{were} ~~are~~ two kinds of beans, gourds, peppers, warty squash and pumpkin. There also were cigaretts as well as fragments of elbow pipes. Metates and manos also can be connected with agriculture. The feces remains would seem to indicate that about 40 percent of their activities was agriculture and about 40 percent wild food collection, and as much as 20 percent was hunting. This is roughly in agreement with the wild plant material. However, this is somewhat different than the ^{immediately} previous horizons which showed somewhat more plant collecting than agriculture ^{and less hunting}. The pots and shell spoons may have been used to prepare this food for eating. Hammer wedges, scraper handles, bone awls and a piercer and an ulna punch, crescentric end scrapers, thick and thin side scrapers, side-notch and screcentric end scrapers, a scraper handle as well as deer skin, jaguar skin, a belt, a piece of shoe, a thong and a huarachi and a leather bag indicate one of the most important activities at this time

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was the preparing of skins. Equally important was the making of pottery. This pottery like in the San Lorenzo horizon and the various other horizons is mainly black ware with some corrugative adhering. However, the San Antonio polished and San Antonio red ware indicate that we are dealing with a different horizon. Weaving continues to be important with lots of string occurring and there are a few ^{simple} twilled mats with square borders and a few simple mats with chequer weave with square corners. Simple loop nets occur. Loom weaving ~~occurs~~ and there were plain weave - double weft and warp woven fabrics

The ~~slow~~ ~~San Antonio~~ and San Antonio points, the crescentic scrapers, the clay pestle, the shell spoon, the plain elbow pipe, the double weft and warp woven cloths, the reed flute, the distinctive twilled mats as well as the the sub-stone pattern and San Antonio Polished and Red pottery indicate that this is a component of the ~~San Antonio phase~~. Many of the associated artifacts are similar to one from previous horizons but we were unable to determine whether they are cultural continuities or merely mixing of older artifacts with the new ones they were using.

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CHAPTER II - THE EXCAVATION AND SURVEY

SECTION I - Romero's Cave (Tm c 247)

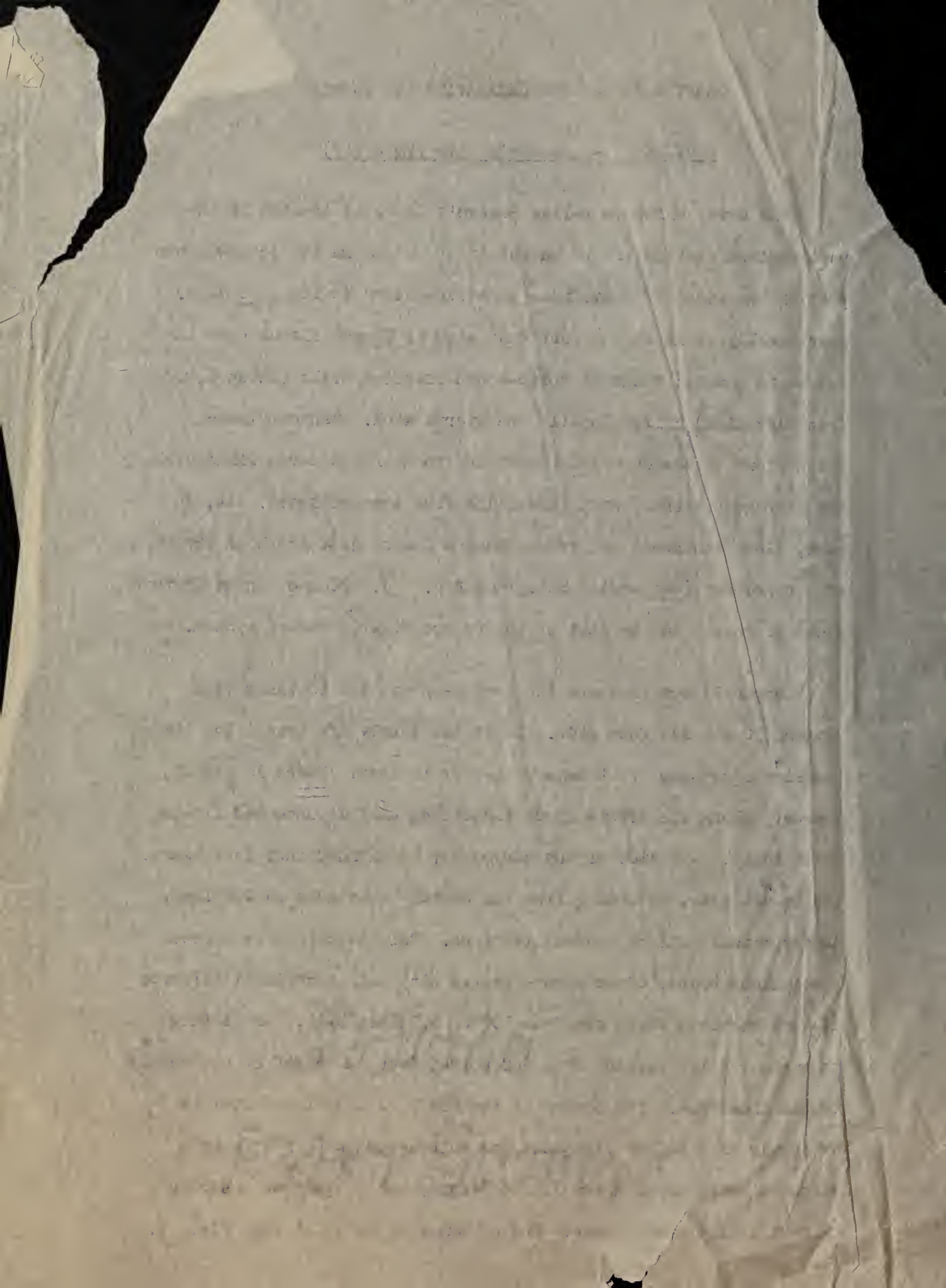
This cave, which we called Romero's Cave, is located in the northeastern section of the municipio of Ocampo in the southwestern part of the state of Tamaulipas in northwestern Mexico (See map). Specifically it is on the southeast side of Canyon Flacco near its source in a small range of north-south oriented hills (about 4,000 feet elevation) called locally the Sierra Azul. Canyon Flacco, which flows southeast to northwest in front of the cave, winds around, and then enters the Canyon Infernillo from the northwest. It, in turn, flows southwest and enters Ocampo Canyon just north of the town of San Lorenzo (See areal photograph Fig.). Ocampo Canyon in turn flows southward and is part of the Panuco River drainage system.

Canyon Flacco is about 600 feet deep and its bottom varies between 50 and 250 feet wide. It is completely dry except for the occasional potholes that have rainwater in them. There is gravel, however, along the Arroyo edges indicating that it once had flowing water in it. The side of the canyon may be divided into four tiers. The lowest tier, extending from the bottom to as much as 200 feet, is a vertical wall of eroded limestone. This is capped by a less precipitous slope, often shrub-covered with only occasional outcrops of rock showing, which are from 100 to 300 feet high. Above this is another cliff varying from 500 to 300 feet in height of noticeably bedded limestone. The bottom of the cliff of this third tier is evidently of a softer limestone and water erosion (~~probably by a stream flowing through the Flacco Canyon~~) has gouged out a series of rock shelters and caves. One of these is Tm c 247 (See Fig.).

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This stratum in turn, is capped by a gentler slope which blends into the top of the hill.

Romero's Cave Tm c 247 faces northeast looking across Flacco Canyon. It is about 15 to 20 feet above the base of the cliff of the third tier and its top is about 100 feet below the top of the cliff. There is a break in the cliff about 100 feet west of the cave and a narrow passage sloping from this break to the mouth of the cave. The cave at the mouth is about 70 feet across and has a maximum height of 80 feet. It is about 60 feet deep. However, the area that is well sheltered and covered by refuse and is smaller, is only 55 feet wide and about 50 feet deep. Here the ceiling is less than 60 feet high.

The refuse floor of the cave slopes greatly from front to back and slopes gently from east to west for about half its width, while the other half is somewhat steeper due to a talus of rocks that have fallen from the roof. The east half, because of its lack of rocks, was chosen for excavation and here the floor was fairly level. Unfortunately, local treasure seekers had dug five large holes in this floor and, of course, had destroyed valuable archaeological materials.

It was, however, this "gold digging" that brought knowledge of the cave to the attention of the archaeologists. Ignacio Guerra learned from the treasure hunters that they had unearthed "mummies" and had the presence of mind to report this to the Instituto de Antropologia e Historia in Mexico City. The institution in turn had sent Dr. A. Romero and J. Valenzuela in 1937 to investigate the cave. They published a report about their trip and the cave's skeletal

Plate - (A) - Picture of Cliff

(B) - Picture of Cave

(C) - Interior of Cave

materials, in 1950. In 1953, while preparing plans for investigating ancient subsistence patterns in Tamaulipas, I read this report and made plans to visit this cave in the course of the archaeological reconnaissance.

Near the end of the first month of our survey in Tamaulipas (December 1953), Ignacio Guerra was contacted and a trip made to the cave. An examination of the profiles of the treasure hunters' pits, as well as the ancient refuse that they had discarded, showed the cave to have archaeological potentialities. Therefore, arrangements were made to undertake a major excavation which began on February 1954. Our general procedure was to move into the area with from 6 to 20 men for a two-week period for excavation and then to come out with the specimens for a rest (and bath) and to purchase supplies during a three or four days' vacation period. Then we would go back again. Actually, five such work periods occurred and our excavation ceased in mid-April 1954. Forty-one days with an average of ten men were spent in excavating Tm c 247.

In excavation we used what might be called a vertical profile stripping technique. To proceed with this method it was necessary first to make a vertical profile at the edge of what was to be our excavation. First we cleaned out two squares north five east five, and north five east ten, which had been pitted by treasure hunters. An attempt was made to dig these in terms of actual strata (~~that was~~ not very successful). When the squares were completely excavated to a depth of about three or four feet and the vertical profiles clean and drawn, the east end (north five east ten to north ten east ten) and the west end (north five to north ten) were dug by a different technique. In this technique we stripped off the top

and, in 1930, in 1931, while preparing plans for investigating
certain conditions existing in the field, I took this opportunity
to visit this case in the course of the systematic

There is no doubt that the work of the Commission in the field of the study of the history of the people of the United States is of the highest importance. The Commission has been very successful in its work, and its findings are of great value to the people of the United States. The Commission has been very successful in its work, and its findings are of great value to the people of the United States.

It is important to note that the vertical position of the line is not constant. It varies with the position of the line in the horizontal plane. The line is at its highest position when it is at the center of the horizontal plane and at its lowest position when it is at the edge of the horizontal plane. This is because the line is at its highest position when it is at the center of the horizontal plane and at its lowest position when it is at the edge of the horizontal plane. This is because the line is at its highest position when it is at the center of the horizontal plane and at its lowest position when it is at the edge of the horizontal plane.

soil zone back two-and-a-half feet from the vertical profile. Actually, one man worked on the profile and removed the top strata by trowel back from the profile to a line that was drawn two-and-a-half feet from that profile. The second man removed the loose fill by shovel and put the refuse and the artifacts (not found by the trowel man) on a screen. The third and sometimes the fourth man then screened this refuse, wrapping artifacts in one package of tin foil, corn in another, obvious domesticated plants still in another, bones in another, pottery in another, and so forth, while the wild vegetable material was put in a bag. At the completion of the stratum stripping in the half square the bag was labelled, the "portion excavated" recorded in our daily diary, and the strata, features, significant finds and speculations put into a section of our note book, called square descriptions. After the first stratum had been removed we dug the next one in the same method until all strata were removed and we had a new profile, two-and-a-half feet east or west of the original one that we had drawn. Then the rest of the square was dug and when it was finished, the profile was drawn and photographed. Such features as found were also drawn separately and photographed and numbered. In such a manner north five, north five west five, and north five east fifteen were excavated. This gave us two twenty-five foot profiles, that is, from east fifteen to west ten along the north five and north ten axis. These were drawn on long profile sheets and the whole profile photographed. Then using the same technique we moved southward into this new profile. First, three alternate squares were dug, west five, east five, and east fifteen by this method just described. When these squares were completed the blocks between, that is square zero and east ten, were removed, thereby giving us a new profile along the zero axis. That was duly recorded. This technique and system continued southward until we reached

Fig. - Excavation Technique

1. Profile

2. Profile

Approximate values - 1919

1919 - 1

1919 - 2

finally the back wall of the cave.

The stratigraphy of the refuse in the cave was for the most part easy to discern. There were however certain factors that tended to make it complicated and ~~had to make~~^{made} the enumeration of our excavation somewhat complex. The first factor was how we excavated. Usually, it was trowelled down to the actual bottom of a well defined strata and this was recorded as one level. This often meant that included in the same level with the well-defined lowest charcoal or vegetable part was loose ash or cave dust above it. For the most part the ash and cave dust had no artifacts and did not seem to be an occupation level. However, in truth, our occupations and zones included not only that of the actual occupation but any casual or stray find that might have been in the ash still above it. The second complicating factor was that the stratum near the mouth of the cave was less numerous than those at the back of the cave. This was due to the fact that the early occupations occurred towards the wall of the cave, and the later ones were either towards the front or all over. Thus between one occupation and another as we dug forward, new strata would appear. In the field notes these other strata begin to be designated Stratum 1A which was between one and two, Stratum 2A which was between two and three, and so forth. The third complicating factor was that the aboriginal occupants of the cave dug thirty-two pits from one strata to another, thereby mixing some of the artifact material. And finally, the treasure hunters had dug five pits. Fortunately, their material was fairly easy to separate from the other material; nevertheless, they had eliminated cultural assignment of some valuable materials. However, from the excavation and ultimately from the notes, drawings and photographs we were able to attain a fairly clear picture of the stratigraphy and occupations.

The relationship of the lungs to the heart was first described by Galen in his treatise on the anatomy of the lungs. He stated that the lungs were situated in the chest cavity, and that they were connected to the heart by the pulmonary arteries and veins. He also described the structure of the lungs, and the way in which they were supplied with blood.

The lungs are situated in the chest cavity, and are connected to the heart by the pulmonary arteries and veins. The lungs are supplied with blood from the heart, and they in turn supply the rest of the body with oxygenated blood. The lungs are also responsible for the removal of carbon dioxide from the body.

The structure of the lungs is such that they are able to expand and contract, allowing them to take in and expel air. The lungs are also covered by a thin layer of tissue called the pleura, which helps to protect them from injury.

The relationship between the lungs and the heart is a complex one, and it is the subject of much research. The lungs are not only responsible for the exchange of gases, but they also play a role in the regulation of blood pressure and the production of certain hormones.

In the study of the lungs, it is important to understand the way in which they are supplied with blood, and the way in which they are able to expand and contract. This knowledge is essential for the diagnosis and treatment of lung disease.

The lungs are a vital part of the human body, and they are responsible for the exchange of gases between the body and the environment. Without the lungs, we would not be able to breathe, and we would not be able to survive.

The study of the lungs is a fascinating one, and it is one that has led to many important discoveries. We are still learning about the lungs, and there is much more research to be done.

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Fig. - Profiles

In total, there were twenty-five strata in the cave which contained sixteen occupation levels. In the following chart, I shall roughly correlate the phases, the strata, the levels, and the occupations. Later in the report we shall no longer indicate the levels and these are recorded here in case someone may want to go back to check our original field notes or specimens.

<u>Zones</u>	<u>Occupation</u>	<u>Back Cave Enumeration</u>	<u>Front Cave Enumeration</u>	<u>Phases</u>
Zone A 1				
Zone A	Occupation 16	Level 1	Level 1-2) San Antonio Los Angeles
Zone B 1				
Zone B	Occupation 15	Level 1A		
Zone C	Occupation 14	Level 2) San Lorenzo
Zone D 1				
Zone D	Occupation 13	Level 2	Level 3	
Zone E	Occupation 12		Level 4) Palmillas
Zone F 1				
Zone F	Occupation 11	Level 3	Level 5	
Zone G 1) Mesa de Gueje
Zone G	Occupation 10	Level 4A	Level 6	
Zone H	Occupation 9	Level 4	Level 7	
Zone I	Occupation 8	Level 4B) Guerra
Zone J 1	Occupation 7	Level 5		
Zone J	Occupation 6	Level 6	Level 8	
Zone K	Occupation 5	Level 7		
Zone L	Occupation 4	Level 8) Ocampo
Zone M 1	Occupation 4	Level 9		
Zone M	Occupation 3	Level 10		
Zone N 1				
Zone N	Occupation 2	Level 11		
Zone O 1) Infernillo
Zone O	Occupation 1	Level 12		
Zone P	- - - -	Level 13	Level 9	

In level, there were twenty-five sheets in the case with numbered
 sheets numbered levels. In the following sheets, I will refer to
 numbers the sheets, the levels, and the positions.
 In the report we shall be using levels in the levels and these
 are located here in case number and will be as well as these are
 located with notes or specimens.

Level	Occupation	Level Date	Level Date	Level
Level 1	Occupation 1A	Level 1	Level 1A	Level 1
Level 2	Occupation 2A	Level 2	Level 2A	Level 2
Level 3	Occupation 3A	Level 3	Level 3A	Level 3
Level 4	Occupation 4A	Level 4	Level 4A	Level 4
Level 5	Occupation 5A	Level 5	Level 5A	Level 5
Level 6	Occupation 6A	Level 6	Level 6A	Level 6
Level 7	Occupation 7A	Level 7	Level 7A	Level 7
Level 8	Occupation 8A	Level 8	Level 8A	Level 8
Level 9	Occupation 9A	Level 9	Level 9A	Level 9
Level 10	Occupation 10A	Level 10	Level 10A	Level 10
Level 11	Occupation 11A	Level 11	Level 11A	Level 11
Level 12	Occupation 12A	Level 12	Level 12A	Level 12
Level 13	Occupation 13A	Level 13	Level 13A	Level 13
Level 14	Occupation 14A	Level 14	Level 14A	Level 14
Level 15	Occupation 15A	Level 15	Level 15A	Level 15
Level 16	Occupation 16A	Level 16	Level 16A	Level 16
Level 17	Occupation 17A	Level 17	Level 17A	Level 17
Level 18	Occupation 18A	Level 18	Level 18A	Level 18
Level 19	Occupation 19A	Level 19	Level 19A	Level 19
Level 20	Occupation 20A	Level 20	Level 20A	Level 20
Level 21	Occupation 21A	Level 21	Level 21A	Level 21
Level 22	Occupation 22A	Level 22	Level 22A	Level 22
Level 23	Occupation 23A	Level 23	Level 23A	Level 23
Level 24	Occupation 24A	Level 24	Level 24A	Level 24
Level 25	Occupation 25A	Level 25	Level 25A	Level 25

Now let us consider each one of the zones in some detail. The lowest zone is called Zone P and is composed of loose gravel and sand. Soil analysis of these materials would seem to indicate that such materials were laid down by a fairly permanent stream. Included in these gravels were a number of large chunks of limestone that had obviously fallen from the roof of the cave. This Zone P and its inclusive rocks overlay the limestone floor of the cave. Now the question becomes as to how this gravel deposit was laid down. There seem two possibilities; one, that these gravels laid down when the present arroyo was being cut (the present arroyo being ^{over} 300 feet below the mouth of the cave). This hypothesis has one obvious difficulty for the limestone rocks do not seem to be waterworn like they would have been if they were in the permanent stream of the arroyo. The other possibility is that at one time a stream from the mesa above the cave flowed through a sink hole and then out the mouth of the cave and that the mouth of the cave received gravel like it was an alluvial fan. Also, the original tunnel of the stream is now hidden. The lack of wear on the limestone slabs, the gravel over the cultural materials and the higher elevation of gravel in the back and sides of the cave all favour this theory. The lack of gravel on the mesa above and our being unable to find the stream's tunnel are against this hypothesis. Whatever the manner of deposition of the gravel was, one thing seems certain: the gravel was laid down during a wet period.

Fig. - Extent of Zone O, Occupation 1 in the excavated area of Romero's Cave.

Overlying the gravels in Zone P in the back of the cave was a dark charcoal-filled brownish strata, the brown being caused by rotten vegetation as well as patches of burnt rock which is called Zone O. Zone O seems to be the earliest occupation of the cave. In a few spots there is a slight amount of gravel over Zone O, but for the most part there is just cave dust. Culturally, as we shall see, this stratum was ^{probably} laid down by the Infernillo people, and their occupation has been dated between 7,000 and 9,000 years ago. Thus I would guess that Zone O is perhaps 8,000 years old. Pollen from this strata shows that the climate was slightly wetter than today. A further confirmation of this wetter climate is that some of the gravel which was water-deposited overlies Zone O, and it must have been deposited during a wet period. Further, the relatively poor preservation of vegetable materials in Zone O would speak for a slightly wetter climate than at present. The zone itself only covers a small patch in the back of the cave, roughly about 50 square feet.

THE EFFECT OF TEMPERATURE ON THE
GROWTH OF PLANTS

Temperature is one of the most important factors in the growth of plants. It affects the rate at which plants grow, the size they reach, and the time it takes them to mature. In general, plants grow faster at higher temperatures, but only up to a certain point. If the temperature is too high, the plant will wilt and die. This is because the plant's cells are damaged by the heat. On the other hand, if the temperature is too low, the plant will grow very slowly or not at all. This is because the plant's cells are not active enough to grow. The ideal temperature for most plants is between 60 and 70 degrees Fahrenheit. Some plants, however, can tolerate much higher or lower temperatures. For example, cacti can survive in very hot, dry climates, while some plants can survive in very cold climates. The temperature of the soil is also important. If the soil is too cold, the plant's roots will not be able to absorb water and nutrients. If the soil is too hot, the roots will be damaged. The temperature of the air is also important. If the air is too dry, the plant will lose water through its leaves. If the air is too humid, the plant will be more susceptible to disease. In conclusion, temperature is a very important factor in the growth of plants. It affects the rate of growth, the size of the plant, and the time it takes to mature. The ideal temperature for most plants is between 60 and 70 degrees Fahrenheit. Some plants can tolerate much higher or lower temperatures, but most plants will grow best in a moderate temperature range.

Also there were two artifacts from down in the gravel in roughly the same position in square west ten and these have been included as being part of this occupation. In total this small stratum composes about sixteen cubic feet of refuse. The small size of the area plus the facts that the burnt rocks are from just a single hearth seems to indicate that the size of the group which laid down the strata was not much larger than a family, that is, a micro-band. Vegetable materials are extremely rare and only twenty specimens were found. There are no flowering fragments found, though there are a few wild pumpkin seeds. These pumpkin seeds suggest an occupation in the early part of the summer. The thinness of the strata plus the subsistence, which we will speak about in a moment, would seem to indicate that the family or micro-band that laid down the stratum only occupied the cave for a short time. Thus from the little evidence we have here they would seem to be nomadic.

There were thirty-two unidentifiable bones. All but one of these might very well be from a deer. The one exception is one that seems to be a bird leg bone. There were two bones that were identifiable and both of these are of the white-tailed deer. Many of the bones had been scraped, I believe, for marrow extraction. These materials would seem to indicate that the group did some hunting. Further confirmation of their hunting is the Abasolo point, Infernillo point, the fragment of an atlatl main shaft, and the thin side scraper. Thinking of the occupation as being by a family, one might suggest that the two deer killed might very well last them as much as a month of their occupation in this area. Their hunting diet, however, was supplemented somewhat by twenty wild plant specimens. Three of these wild specimens are from wild squash. Seeds from a feces may be from a very small

variety of pumpkin, cucurbita pepo, which indicates a use of domesticated plants. The one humped scraping plane may very well have been used to pulp some of these wild vegetable materials, and this is a further indication of their food gathering activities. An estimate reveals that as far as subsistence activities are concerned, this group gained perhaps about sixty percent of subsistence by hunting, and about forty per cent by wild plant collecting, and less than one per cent from agriculture.

Other artifacts in this strata give us a glimpse of some of their cultural activities. One small fragment of a chequer-woven mat with an oblique corner indicates that they manufactured mats and perhaps were using sleeping mats. The other artifact is a small strand of cord made from Z-twisted hard fibre yarn to form an S-twisted cord. In terms of cultural relationship the Infernillo point and the chequered mat are diagnostic of the Infernillo phase which was found predominantly in Tm c 248. The humped scraping plane and Abasolo point also are common in this culture. The side scraper, the string and the atlatl fragment, however, are too general to make for any exact cultural connections.

Overlying Zone O is ash and cave dust and a little gravel. There are no artifacts in this strata and it seems it is considered to be the upper part of Zone O, sometimes called Zone O-1, and this seems to be a time when the cave was not occupied. In terms of our Carbon 14 dates, this top part of Zone O without occupation probably represents a 2,000 year time period.

Fig. - Extent of Zone N, Occupation 2 in the excavated area of Romero's Cave.

Overlying the cave dust of Zone O-1 is Zone N. This is a thin charcoal stratum with some vegetable material in it. Some of the charcoal has been dated by Carbon 14 as being 3,244 B.C. \pm 200 years (M). We unfortunately have no good climatic data or pollen from this small thin stratum. The zone itself covered about 75 square feet and was usually only 2 inches thick. In total it had about 8 cubic feet of refuse. There were no features in it and no evidence of burnt rock. The small extent of the stratum seems to indicate that it was occupied by a micro band, that is, a group not very much larger than a family. The limited extent of the stratum and its relative thinness would seem to indicate that this again was a relatively temporary occupation. The squash seeds also indicate that this short occupation probably occurred in the late spring or early summer.

One identifiable deer bone and one identifiable rat bone and twenty split bones (broken for marrow), would indicate that these

Fig. 1. Section of the H. population 2 in the
vicinity of the H. population 1.

Comparing the data of the H. population 2 in the

vicinity of the H. population 1 in the

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One of the main results of the study is the

fact that the H. population 1 in the

people did some hunting. The Abasolo and Tortugas projectile points and side scrapers may very well have been the implements used in the dealing with the chase. However, the greater bulk of food seems to have been wild plant material (20 specimens). There was one capsule of tripsicum grass and a pod of wild phaseolus cocconineus, that is runner beans. The mortar, the scraping planes and the saw-like chopper were probably implements used in preparing this wild food stuff for meals. The one squash stem seems to indicate that, while these people were basically food-gatherers, they did use domesticated plants in probably much the same manner as they used wild plants. An estimate of the subsistence of this occupation would seem to indicate that probably over sixty per cent of their food came from wild plants and perhaps thirty-five per cent came from hunting with a very small amount from domesticated plants. Other artifacts are relatively rare. One of the activities of this occupation seems to have been working leather. The side scraper and perhaps the scraping plane and an antler piercer all might have been tools used in preparing the skins. There also is a two-strand string, one piece being with Z-twisted yarn and a hard fibre, while the other being S-twisted yarn of a softer fibre. There is also a little fragment of a chequer-woven mat.

The Abasolo point, the small flake side scraper and the Z-twisted string and the chequer-woven mat all are quite similar to what was found in Occupation 1. However, Occupation 2 has a number of traits that definitely place it in the Ocampo phase and not in the earlier Infernillo phase. One of these is the Tortugas triangular point and another is the fragment of a mortar. Also, saw-like choppers and humped scraping planes are more common or as common with Ocampo as they are with Infernillo. The S-twisted yarn of string and the piercer are,

of course, very general traits and could belong to any of the latter phases.

Overlying Zone N is another layer of ash and dust material that is called Zone N-1. It seems to represent a period when the cave was not occupied.

Fig. - Extent of Zone M, Occupation 3 in the excavated area of Romero's Cave.

Next comes a thin 1-inch thick stratum which covers a small portion in the back of the cave which was composed of well-preserved vegetable material with a little charcoal in it. This Occupation 3 of Zone M made up about twenty-one cubic feet of refuse. About one fifth of this refuse came from two pits, one was a small roasting pit, that is, a pit filled with burnt rock and charcoal, while the other pit was a little bit larger and was crammed with leaves of Huapillas. The single fireplace and the extent of the refuse would seem to indicate that a single family or a micro band laid down the stratum. The thinness of the layer would again indicate a relatively brief occupation, though perhaps a little longer than the previous two. A single flower of cactus plus beans and squash might indicate that this occupation occurred during the late spring, perhaps during the

months of April and May. Our estimates of subsistence would seem to show that slightly less than forty per cent of their food came from hunted material, half from plant collecting and the remainder from agriculture. The single fragment of deer skin, a piece of a bone of a skunk and bone of a bird, as well as thirty-four split bones were evidence for hunting. There are however a number of tools that also can be connected with the chase. These include Abasolo, Tortugas and Abasolo points, a flat end atlatl foreshaft, side scrapers both of the thick and thin variety, a pebble chopper, a discoidal scraper, and an elongate end scraper. All of these could somehow be connected with preparing animal remains. About as important as these remains are hundred-and-thirty plant specimens. Among these plant specimens are tripsicum grass and runner beans, as well as remains of a gourd represented by ten rind fragments, a pepper remain, and a number of seeds of squash, as well as two pods of common beans of the yellow-seeded variety. The flat and humped scraping planes and the saw-like chopper may have been used to make these vegetable remains into a palatable dish.

One of the activities of this group while it occupied the cave seemed to have been the making of hunting tools. The gouge may very well have been used to work wood for making the atlatl foreshaft, which - I might add - is not quite finished. It also could be used for making the pointed wooden stick and for making the hammered split and conical wedges. Another activity seems to have been working skin; the small piece of deer skin is obviously an indication of this. Split and ^{wooden} conical wedges may have been used to peg down the skin while it was being scraped, while the discoidal scrapers and side scrapers and perhaps the scraping plane may have been used in fleshing the skin. They all may have been used as awl for piercing the hide. There was a single

fragment of twilled mat which may have been, of course, a sleeping mat and both the awl and the pointed stick may have been used in making this mat. Again, there are a number of pieces of string.

As far as cultural connections are concerned, the Z-twisted hard yarn string, the scraping plane, the atlatl, the awl and the chopper and the thin side scrapers seem to be a continuity from the earlier horizons. None of them are particularly diagnostic artifacts. The Abasolo, Nogales and Tortugas points, however, are definite Ocampo artifacts. Twilled mats, discoidal scrapers and gouges are also common in these horizons. Other more general traits are the pointed stick, the wedges and the pebble choppers and the elongate scrapers. These, of course, are not unlike other Ocampo remains.

Overlying the lower vegetable material of Zone M was a brown gray soil. There also was a considerable amount of charcoal in this zone which was called Zone M-1. Originally it was thought to be an occupation level, was excavated and called Level 9. However, when it came time to analyze these materials, no artifacts were found in it and there were some indications of intrusions of vegetable materials from the zone immediately above it, Zone L. Thus I would believe that Zone M-1 again is a time when there was no occupation in the cave. However, it would seem that there was probably a relatively small amount of time between Zone M, Occupation 3, and Zone L, Occupation 5.

The next area or zone in the cave was called Zone I, and in it was found Occupation 4. This stratum is of brown vegetable material. It varies between two and four inches in thickness. Within the excavated area it covered about nine 5-foot squares, but there was considerable evidence that to the west where we did not excavate it was more extensive. On the basis of this I would guess that there are at least sixty cubic feet of refuse in this stratum. Extending down from this stratum was one pit (26) with fired rock in it. And there also was one rather shallow irregular pit which had quite a bit of wild plant material stored in it. Looking at the extent of the refuse one might guess that it had been occupied and laid down by perhaps a family or two, in other words, something somewhat between a micro-band and a macro-band, but still more of the micro size than of the larger size. There is some evidence that it was occupied for a slightly longer time period than our previous horizons. In the refuse were some flowers which would have been picked in the spring but there also were nuts, which would be fall picking, as well as peppers, corn, bean, and so forth, that I would guess it was probably ^{gathered} in the summer. Thus I would believe that this occupation was probably by a fairly small group but that it was seasonal, perhaps running from sometime in the spring to sometime in the fall.

As far as the actual subsistence is concerned, there were eighty bone fragments. Most of these were unidentifiable and had been split for their marrow. There were, however, two deer bones and a fragment of deer skin and also a tooth of what seems to have been a dog. There also is one bone of a Cocomixtla. Beside these few bones there were other evidences of hunting. There was an Abasolo point, and then wrapped in a leaf in the back of the cave were three Tortugas points, two of them attached to atlatl foreshafts and one attached to a lance shaft.

Beside these obviously hunting implements there also were a number of scrapers which might be connected with the curing of animal skins which were taken in the chase. However, the predominant material was wild plant food stuff. There were 408 plant remains. Among these plant remains were some grains of *tripsicum* as well as some of *panicum*. There also were a number of implements that could be connected with collecting and preparing plant remains. The net and the basket, both open types, more or less like sieves, certainly could have been used to bring in plant materials to the cave as well as sifting the plant materials for seeds. The sawed chopper and the scraping plane also could have been used for preparing these food remains. Somewhat different from our previous remains are quite a variety of agricultural plants though they are rather limited in number. These people certainly were doing some sort of limited incipient agriculture. There are fragments of gourd rind, a squash stem, and in the feces there were definite evidences of bean tissue and bean pod, probably indicating that the beans were green. There also were in the feces a couple of chili pepper seeds and a number of pieces of corn silk with the pollen still adhering. It is most peculiar that nowhere in the actual layer did we find any whole corn cobs. One cannot help but wonder if they were not planting corn but rather collecting some sort of wild corn which they eat green, probably chewing the cob and sucking out the juice and nutrition and then spitting out the remains outside the cave. In such a process some of the pollen and some of the corn silk, of course, might have gotten swallowed outside but defecated inside. An estimate of these remains would probably indicate that about eighty per cent of their diet was from wild plants, about ten per cent from hunting, and perhaps another ten per cent from a variety of domesticated plant species. Some of the sticks from these vegetable materials were

analyzed for Carbon 14 and revealed the date of 2,604 B.C. \pm 200 years. Also, some of the dust of the pollen was analyzed and revealed that these people were probably living in the area when it was as dry or perhaps a little drier than it is at the present time.

Now as to the other cultural activities of our fourth occupation. One activity seems to have been the chipping of stone artifacts. There is an antler hammer and there were many more flint chips in Zone L than there had been in any of the previous horizons. I suspect that the Abasolo and Tortugas points found were made during this occupation. In fact, the three Tortugas points with the foreshafts, neatly wrapped in a leaf, might be showing that a workman had just finished making these and set them aside to be used later. Beside this activity of chipping flint they seem also to have been working skins. There was one piece of deer skin which had been scraped on one surface, while hair was adhering on the other. The thick and thin side-scrapers may have been used for slicing and initial scraping of skin; the elongate end scraper and the disk scraper could have been used to take off the fats tissue from the skin. Another activity which these people may have done during their long seasonal occupation was making wood tools. A fragment of a gouge may have been their working implement. The atlatl foreshaft and lance, the pointed sticks and the wedges all could have been made with this tool. Still a further activity of the occupants of the cave was weaving. A number of different kinds of cords were made. Two of these cords were made with Z-twisted hard fibre yarn. One was composed of cord made of two yarns, while a second was composed of four yarns. There also were some cords made of softer fibres. The yarns were S-twisted and the cord itself was made from two yarns which, of course, was twisted in a Z direction.

Many of these cords had been tied into knots, the commonest being the simple over-hand knot, but almost as numerous were square knots. Whether these strings were to tie or bind objects or parts of traps is difficult to say from our slim evidence. Somewhat more complex than the making of strings was the making of nets and a basket. The pointed stick of wood may have been the implement used in pushing the fibres through the coiled elements in making the basket. The basket again is of the sifter-type with quite large spaces between the coils. The coils are of a bundle foundation and the element tying them together are what I have called loop and twist variety. The net is also of the loop and twist or full-turned coil type of net. A piece of twilled mat occurred that also might have been part of a basket.

Now as to cultural relations. There are still some resemblances to our earlier Infernillo horizon but they are of a most general nature and include the Abasolo point, the scraping plane and the Z-twisted yarn. All these traits seem to carry on into Ocampo times. Definite Ocampo traits are the Tortugas points, the disk scrapers and the sawed choppers, the gouge and the loop and twist net and loop and twist basket with a bundle foundation, and the twilled basket. Most of the other traits are of a fairly general nature and could belong to any of a number of cultural phases. Zone L is perhaps our best example in the Romero's Cave of a component of the Ocampo phase. As we shall see the occupation of the Ocampo phase in this cave is not quite so extensive as in the adjacent cave. Beside the obvious cultural and agricultural differences between the earlier Infernillo culture and Ocampo, this stratum brings out a number of significant other differences, one is that the Ocampo remains seem to have been during a dry climatic period while Infernillo ones had been in a

somewhat wetter time period. Secondly, there seems to have been a considerable shift in the subsistence pattern with the Ocampo people, dependant mainly on wild plant material with about as much incipient agricultural remains of domesticated plants as they obtained from hunting. This is in contrast to Infernillo which had about as much wild plant collecting as hunting and an extremely small amount of domesticated plants.

Fig. - Extent of Zone K, Occupation 5 in the excavated area of Romero's Cave.

Lying immediately on top of the vegetable stratum of Zone L was a grey ash layer (Zone K) with a very few pieces of vegetable material in it. This seems to be an actual occupation area, called Occupation 5. As we shall see, it has many cultural differences from that of previous horizons. It occupies very much the same area in the excavated portion of the cave that Zone L did. However, there is one difference; Zone L seems to have been expanding into the unexcavated area, while Zone K is definitely diminished. Thus the actual truth is a much smaller area of occupation and in total number of estimated cubic feet much less. It is estimated as having had 22 cubic feet of refuse. I

documented, and the collection is being used as a reference for the study of the history of the collection.

would estimate that this was probably only a family or a micro-band occupation. While the layer gets as thick as three inches in certain places, it is nowhere as clear or as well defined as Zone L, and the vegetable material would seem to suggest that it is less than one season, probably the cool part of the summer. The subsistence seems to be very much different. No bone material was found whatsoever. However, there were a number of artifacts that could be connected with hunting: Abasolo point, Catan and Matamores points, rabbit sticks and atlatl foreshafts and mainshafts, a barbed wooden atlatl foreshaft as well as thick and thin scrapers. All would seem to be connected with game. However, there is a possibility that they also could be connected with warfare or be connected with the making of hunting implements for hunting at another season when they are no longer occupying the cave. Wild plant remains, 143 of them, are relatively rare. There is some wild squash seeds and rinds, and there are a few implements that would seem to indicate food collecting: the thick and thin chopper, the flat scraping planes, the net and the basket. Almost as important as the wild plant material, and certainly as important as the evidence of hunting, was the wide variety of agricultural remains. Here we have not only squash seeds, rinds and stems, but also an actual corn leaf and a gourd container. While none of these plant remains are very numerous there does seem to have been a shift with a good deal less hunting which seems to have been somewhat replaced by agricultural remains. Other artifact material besides the ones mentioned previously seem to have been fairly rare and for the most part seem to be connected with weaving. There is some Z-twisted yarn and some S-twisted yarn cord, a single simple loop net bag, and a split-stitch basket. A small pointed stick which might have been used in weaving these baskets occurred.

While many of the artifacts of Zone K are like those found in the previous horizons, the Catan and Matamores points, the rabbit sticks and the barbed point seem to indicate that we are dealing with a new cultural type, which I am calling the Guerra phase.

Fig. - Extent of Zone J, Occupation 6 in the excavated area of Romero's Cave.

Overlying the grey ash was a distinctive clearly defined zone, called Zone J, Occupation 6. In the front of the cave it was reddish brown in colour, while in the back it is pure brown vegetable material. In fact this was one which was encountered in the initial part of our excavation and which we followed all the way through, and it often acted as a sort of datum plane in defining our layers to be excavated and also in numbering and renumbering our excavation levels. From the dust of this extensive zone of vegetable material we obtained a pollen sample. This pollen sample would seem to indicate that the climate during this time period was wetter than it is at present and perhaps as wet as during the initial Infernillo occupation. A few sticks were also taken from this vegetable layer for a Carbon 14 date. This Carbon 14 date of roughly 2,700 B.C. seems to have been contaminated. I cannot help but believe that some of the sticks sent

in for analysis had been dug up by the occupants of Zone J from an earlier level. This belief is based on Carbon 14 dates below this stratum and the dates above it. I would guess that probably a date of 1,700 or 1,800 B.C. would be ~~mf~~ more correct than this one. The layer itself included what we estimate to be as about 380 cubic feet of refuse. Extending down from this layer were three hearths and a grass lined pit, perhaps a pit used for sleeping. The extensive size and the numerous hearths suggest that the occupants were macro-bands. The thinness of the stratum and the kinds of plant remains that we have, suggest that these people moved into the cave to live in its cool atmosphere during one summer.

Fifty-three unidentifiable bone fragments were found and a couple of these seem to be a deer. One identifiable bone is from an actual deer. Implements that seem to be connected with hunting are Abasolo, Catan, and Matamores projectile points, an atlatl mainshaft, an atlatl foreshaft. Other implements such as the disk scraper, the antler piercer and the elongate scraper may have been used also for working on hunted material. However, much more numerous than the bones were the 242 plant remains, including wild squash, amaranths, tripsicum grass, wild runner beans. The muller and the saw-like chopper seem to have been materials that were used in preparation for these wild food stuffs. There are considerably wider varieties of domesticated plants. These included gourds, squash seeds of both cucurbita pepo and cucurbita moschata. There are also bean remains from these materials. There are also four corn cobs. A long, relatively pointed stick with a pounded end might very well have been the implement used for making holes in the ground in which to drop the kernels of corn during planting. The only other activity that we have evidence of is that of weaving and these are but two strands of two-yarn cord of

§ Z

Z-twisted hard fibre yarn. As far as cultural relationships are concerned, the Catan, Abasolo and Matamores points and the muller as well as the agricultural plant remains would seem to show that we are dealing with a component of the Guerra phase. Again, the number of scraper types and the Abasolo points and the saw-like chopper seem to be hold-overs from an earlier horizon.

Fig. - Extent of Zone J-1, Occupation 7 in the excavated area of Romero's Cave.

In most parts of our excavation this more distinct Zone J gradually became more yellow brown in colour, or more like terra rosa colour in the next layer above. This, however, in spite of its connections with the earlier parts seems to be a separate occupation which we are calling Occupation 7. The reason I say this is, that in the extreme back wall of the cave there was an actual thin strip of cave dust separating this yellow-brown ash from the lower reddish-brown ash. The terra rosa soils in this layer would certainly indicate a much wetter climatic period. The stratum itself is relatively small and extremely thin; it composes only about 68 cubic feet in the whole cave. On the basis of this limited material I would guess we are dealing with a small group who occupied the cave for a single season.

There are fifty-two unidentifiable bones and almost all of these are split. Some of the unsplit ones, however, seem to come from birds. The rest of the fragments are too small to say what animal. An Abasolo point, Matamores and Catan points and a disk scraper also seem to have been connected with the chase. 262 wild plant remains occurred as well as a chopper and a scraping plane that could have been used in preparing these wild plant remains. Again, there are indications that agriculture was certainly as important as hunting. We had both gourd and pumpkin remains, we have corn cobs, and we have definite evidence of the common kidney bean. There also was a ball of string which is S-twisted (and probably hand-twisted rather than spindle whirl twisted) cotton string. This indicated still another domesticated plant that these people had. The only other activity besides subsistence indicated in the cave is again the making of string. Besides the actual cotton string there are two cords of soft S-twisted yarn. The Abasolo, Catan and Matamores points as well as the food stuffs indicate that we are dealing with a component of the Guerra phase.

Fig. - Extent of Zone I, Occupation 8 in the excavated area of Romero's Cave.

Directly over the yellow ash zone is Zone I, Occupation 8. This is a relatively thick layer of pure vegetable material. Pollen and plants from this stratum have been studied and reveal that we are dealing with people who lived here during a wet period. As far as the stratum is concerned it is located mainly in the back of the cave. It however seems to be expanding and probably was larger in the unexcavated part of the cave than in the area we dug. An estimate of the number of cubic feet of this relatively thick layer of refuse is that is had about 200 cubic feet. Within the stratum were three hearths and right back against the far walls of the cave was a burial pit. In terms of the size of the area occupied it would seem that we are dealing with a macro band; the three hearths would mean at least three families and it might have been as many as six families. The large amount of vegetable material with the corn and the bean and squash may very well mean that we are dealing with a people who were here during a harvesting season and probably were here the whole next season. Thus Occupation 8 is a seasonal occupation by a macro band.

In terms of subsistence, seventeen unidentifiable fragments of bone were found and one of these seems to be the leg of a bird bone. Mixed in with the tremendous amount of vegetable material were a number of implements that might be connected with the hunt, these include the Catan and Matamores points, a wooden dark blunt, an atlatl mainshaft, as well as discoidal and flake scrapers that might have been used for skinning. Wild plant material number 360 specimens; included in these are a number of huapillas leaves, opuntia leaves, panicum, tripsicum, ^{ho}manihot and amaranth. Implements that might have been used to prepare these wild plants are the choppers. These plant materials might have been collected in the various baskets and nets

we found with the refuse. These wild food materials represent between 50 and 70 per cent of the total food stuff for the layer. The final subsistence activities seem to be agriculture. These materials represent from perhaps 20 to 30 per cent of the diet of the people of this layer and this activity seems to have been more important than hunting. Included in the agricultural stuff are 250 corn cobs, some bean fragments, some pumpkin fragments, some cotton, some gourd fragments as well as a whole gourd container and a single possible seed of *teocentli*.

Besides tools concerned with their subsistence pattern, we have some proof of other activities. The flake and discoidal scrapers indicate that skins were being prepared during the occupation, and a single fragment of a leather sandal or *huarauche* seems to be one item of skin that they had manufactured. Perhaps the most numerous activity we have evidence of is weaving. With the associated burials and in the stratum itself there was a great deal of string. Much of the string is Z-twisted hard fibre yarn which has been made into four-yarn cord. There are three S-twisted hard yarn cords, four S-twisted hard yarn cords and some simple cotton strings. None of this cotton string seems to have been made by use of a spindle whirl. Some of this string had been used to make net bags. There is a twisted loop bag, a knotless twisted net bag, and a simple loop bag. There also is a twined (basket-maker-like) blanket with a black geometric design woven into it. This may have been made on a belt loom. There also is a plain woven chunk of cotton cloth. Besides these woven objects there are a number of baskets most of them are of the coiled type. Most numerous are split-stitch bundle foundation baskets, either in the form of large pans or in the form of bowls. There are also two better

distinctive sifter-type bags with interlocking twisted stitch. The final items of weaving are the mats; most of these are twilled and are distinctive in having special types of selvages. They also have either square or rounded corners and these lateral borders either are made by overlapping double strands or by one over one, or two over two strands diagonally bent edges.

Equally distinctive of this Guerra horizon are its burials. All three bodies were placed in one large shallow pit, 3 feet by 4 feet, at the back wall of the cave, literally in a small cave in the big cave. First the pit had been lined with palm leaves. Next a young adult male had been laid in the pit on his left side with head to the southwest. He was in a semi-flexed position with his left hand flexed lightly against his body so his hand was under his face while his right upper arm was at an acute angle from his body and his right forearm extended away from the body as it was at a right angle to the upper arm. In his pubic region there was a mass of string (perhaps a fringed apron) and some of this string passed around his back (perhaps a belt for the apron). His upper legs were at slightly more than a right angle to his body and pointed slightly downward, while his lower legs were parallel to his body being at slightly more than right angle to the upper portions. The second skeleton, a young adult female, had her tightly flexed legs wrapped in a twined blanket, a loop-twist loop net bag placed in her pubic region and the blanket, bag, and flexed legs tied with rope. Then she was placed in a slightly deeper position of the pit on her right side facing the first burial and head to the southeast. Her right arm was flexed against her chest while her left one touched the male burial's chest. Also, the right hand and forearm of the male burial had been laid over her

The first thing I noticed when I stepped out of the car was the cold. It was a sharp contrast to the warm blanket I had been sitting under. I looked around and saw a few other people walking towards the same building. The air was thick with the smell of exhaust from the cars parked outside. I took a deep breath and felt a sense of relief. It was good to be outside, even if it was just for a moment.

I walked towards the entrance of the building, my feet crunching on the snow. The door was slightly ajar, and I pushed it open. A bright light emanated from inside, and I felt a wave of warmth. I stepped inside and closed the door behind me. The room was large and empty, with a high ceiling and a single light fixture hanging from the center. I walked towards the back of the room, where I saw a small table and two chairs. I sat down and looked out the window. The view was of a snowy landscape with a few trees and a distant building. I felt a sense of peace and solitude. I had found a quiet place to sit and think.

left arm and side. Her flexed bound and wrapped legs were at right angles to her body and they extended between the legs of the male so that the knees rested against the back part of his ilium. The final burial, a child, had been placed in the pit in back of the male. The child, very young (less than 12 months) had been placed in a tightly flexed position on a large twilled mat. Two small baskets, one inside the other, and a net were placed in his lap while two slightly larger decorated bowl baskets were placed on his head. Then a large rectangular mat was wrapped around his body so that it ended in its back region. Then another mat was placed around the head and around the first mat. Finally, a smaller mat was wrapped around the body so that it ended near the front of the body. Next, various strands of string were tied together to make a long rope and in some cases three or four cords were laid parallel and tied to strengthen the rope. Then this burial bundle was laid roughly in the middle of the length of rope. The rope was then wrapped around once and when the portion twisted they were turned 90° degrees and wrapped around in the opposite direction. This process continued until there were seven loops around the body and six up and down the body. The ends were then tied and a small braided simple woven tumpline attached to the whole bundle. It was then laid in the pit on its left side, the head to the southeast facing the back of the adult male. Next a water bottle made from a gourd, an atlatl mainshaft and Bat Cave corn were placed southeast of the man's head and then the male and female and a small portion of the child covered by two rectangular twilled mats. After this a large pan-shaped split-stitch bundle-foundation basket was placed over the mat over the pelvis of the male and the knees of the female and another over the child and part of the mat over the male's back. Finally, the pit and burials were covered.

Fig. - Burial

~~plates (?)~~

Table 1. 1957

Table 2. 1958

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Plates -

Before passing on to the other occupation descriptions it seems fitting and proper to pause a moment and consider the implications of this multiple burial. The first question that comes to mind is, where did they die? The tumpine on the child bundle burial and the partially wrapped female burial makes one suspect that death was met not in the cave but outside it, and the dead were carried into the cave and buried. What is the relationship of the three? The trio, a young male and female and a very young child seem most likely to have been a family group. (It is hoped that eventually blood-type studies of these burials will check this hypothesis).

What is the reason that this family (?) died together and why were the male and female buried in positions that strongly suggest coital or other intimate relationship, that is, the arms in fondling position, the female's legs thrust between the male's legs and thrust against his privates(?). Three explanations seem possible. One is that the family (?) died of disease (and the feces from the same level indicate that diseases such as amebic dysentery were prevalent and that their living quarters were not very sanitary). The position may have been due to the sexual attitudes of Guerra people who might have thought that some sort of intimacy or fondness should be carried on not only in this life but into the next. Another explanation is a more melodramatic one. This is that the male and female had incestuously or adulterously given birth to a child and that the mores of the Guerra society were such that when they were caught they had been executed and buried in a manner simulating their crime. The final explanation is that this is some sort of human sacrifice. I feel the first explanation is the most likely.

Distinctive traits of this component Occupation 8 of the Guerra phase are the Catan and Matamores points, the split-stitch baskets of

both the pan and the bowl type - the latter of which is decorated, the Bat Cave corn, the twisted stitch bundle foundation baskets, the twined basket-mat^k-like blanket, the simple bags and the woven mats with rather distinctive types of edges. There are of course string types and some general scraper types that seem to hold over from earlier horizons. As we shall see, this Guerra horizon has much in common with the following phase.

Fig. - Extent of Zone H, Occupation 9 in the excavated area of Romero's Cave.

Overlying the rather thick vegetable layer of Zone I and separating it from an equally thick and distinctive vegetable layer, Zone G was a relatively thin layer of ash and charcoal which is termed Occupation 9, Zone H. This is a relatively small occupation area in the back of the cave and is only represented by about 80 cubic feet of refuse. There is one grass pit that extended down from it. Much of the refuse material seems to have gotten burnt and there are numerous patches of charcoal. Whether these in part represented hearth areas or just burnt garbage material is difficult to say. In terms of the extent and of the thickness of the strata it would seem to be a very brief

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occupation, probably not more than a season. These squash remains and some of the other agricultural remains suggest that it occurred either during the summer or the fall. The small size of the area might mean only a couple of families, in other words a micro band.

The subsistence in spite of the large amount of burning of the stratum, is actually represented by a fair number of items. There were 34 unidentifiable bones on this layer. Besides the bones there are a number of tools that might be connected with the chase. These include Matamores and Catan points, an atlatl fragment, atlatl fore-shafts, mainshafts, and part of a spring trap. There also were a few scrapers which could have been used for preparing the skin of the animals caught in the hunt. Besides this relatively small amount of evidence for hunting there were 465 wild plant remains. I would suspect that this is far from representative of the total number that once existed in the stratum and I believe that much of the wild plant material had been burnt off and had become the charcoal of the stratum. There are a number of kinds of wild plant material that include a few grains of panicum, a few seeds of wild squash, some opunti leaves and agave quids. The thick and thin choppers may have been the implement which they used to chop up the vegetable material and making it ready for a meal. Agricultural remains are not overly numerous but there is quite a variety. Even from our rather limited sample it would seem that agriculture was a good deal more important than hunting. There are pumpkin and gourd remains, some corn remains, and some evidence of cotton. From the feces we have, some evidence that these people used peppers and were eating mature beans.

Besides subsistence activities there is some evidence that they did quite a bit of weaving. There are a number of kinds of string which are

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tied into a variety of knots. There are also some fragments of twilled mats. The final item, which is a tumpline, is made from cotton. This cotton was woven probably on a belt loom and was woven by what we call the simple one-over-one-type weave. However, the most important new activity of this horizon is the making of ceramics. These ceramics seem to have been basically coil made and the clay may have been collected from the arroyo bottom. There are small amounts of temper in it and then seems to have been fired in some sort of kiln with artificial draft; the pottery is fairly hard. Some of the pottery, particularly the black ware, was fired in well-controlled reducing atmosphere. The brown, brushed and the plain ware seems to have been fired in less well-controlled atmosphere which was mainly oxydizing. Not many rim sherds were found but there does seem to be some evidence of flat-bottomed bowls as well as storage or water jars. I greatly suspect that none of this pottery was made in the cave but brought in by the occupants to the cave from some other area; exactly where was the village of these people has not been determined.

In terms of cultural relations this Occupation 9 seems to represent a fairly definite break in our sequence, as indicated by the first occurrence of pottery. However, the projectile points, the types of atlatl fragments, the twilled mats, and most of the woven items indicate a great deal of continuity from the earlier Guerra horizons. In fact this new Mesa de Guaje component seems to be nothing more than the Guerra type culture plus ceramics.

[illegible]

Fig. - Extent of Zone G, Occupation 10 in the excavated area of Romero's Cave.

Zone G, Occupation 10 was another marker layer in our excavation mainly because as we dug down, this is where the pot sherds stopped. It actually was a fairly extensive layer. In the front of the cave it was mainly composed of charcoal with very few patches of vegetable material. It was relatively thin. In the center part of the cave it was charcoal and reddish brown soil. I believe this colouring of the reddish brown soil is due to the fact that some of the vegetable remains had become partially disintegrated. In the same center area it also began to noticeably thicken. This thickness continued into the back of the cave where this layer was a solid mass of vegetable materials. Pollen studies as well as identification of several vegetable plants would seem to indicate that this was a wet period. One of the identified vegetable plants indicative of being wet climate was some manihot remains. Sticks from this horizon have been dated by Carbon 14 as 1,486 B.C. \pm -(M-). Other sticks from this layer plus some charcoal

Fig. 1. Diagram of the structure of the
mammalian eye of the eye.

From the diagram it can be seen that the eye is a complex organ, the structure of which is determined by the function it performs. The eye is a sense organ, which is responsible for the reception of light and the formation of visual images. The diagram shows the various parts of the eye, including the cornea, iris, lens, retina, and optic nerve. The cornea is the outermost part of the eye, which is responsible for the refraction of light. The iris is the colored part of the eye, which is responsible for controlling the amount of light that enters the eye. The lens is a transparent structure that is responsible for focusing light on the retina. The retina is the innermost part of the eye, which is responsible for the reception of light and the formation of visual images. The optic nerve is a bundle of nerve fibers that carries visual information from the retina to the brain. The diagram also shows the various muscles of the eye, which are responsible for moving the eye and focusing the lens. The diagram is a simplified representation of the eye, but it shows the basic structure and function of this important sense organ.

from Zone H have also been dated and these give a date of 1,690 B.C. \pm -(M-). My personal opinion is that these dates probably represent the very beginning of this Mesa de Guaje phase.

Extending down from this layer was a single grass lined pit that was a cache pit and contained a large number of corn cobs, and a pit which was filled with charcoal and a few pieces of burnt rock. The final pit was a burial pit. The contents of these pits plus the refuse and the estimated refuse from the unexcavated portion of our cave allow us to estimate that this layer contained more than 570 cubic feet of refuse. The extent and size of the cave in thickness would seem to indicate that it was occupied by a macro band. The vegetable material and the numerous domesticated plant remains would seem to say that it was a couple of seasons. The numerous pieces of corn certainly suggest that this may have been a place where the farmers lived from a corn planting through a harvesting season.

Sixteen bones - not identifiable - make up our slim evidence that these people hunted. A Mesa stem point as well as Catan and Matamores points, atlatl foreshaft and mainshaft as well as a fragment of a wooden trap and some scrapers seem to be the sort of implements that were concerned with the chase. Much more numerous than the bone remains were 698 wild plant remains. Though there were a wide variety of plants, manihot, panicum, amaranth, agave and opuntia have been identified as being in the stratum. There are a number of implements that could have been used in gathering wild plants and preparing them for food. These would be baskets, nets, scraper planes, choppers, mullers, and various kinds of bags. Some of the bags and nets and baskets, of course, could also have been used in collecting their agricultural remains. The agricultural remains are both numerous and varied. There are long red- and yellow-seeded beans. As far as we can tell, these beans

seem to have been picked and prepared for food when the seed was ripe rather than when it was young, as it happened in the earlier horizons. There is a single seed of sunflower, there is a great deal of corn, and many of the cobs show evidence of teocentli integression. There is also some teocentli grains. Gourds, pumpkin and warty squash seeds, rinds and stems occurred. There also is string made of cotton. Our food remains from identifiable plant and bone specimens would seem to indicate that there was very little of any hunting and that their subsistence activities were mainly food collecting with some agriculture, perhaps 55 per cent food collecting, 40 per cent agriculture, and 5 per cent hunting. However, supplementing this rather gross estimate based on garbage we have analyzed nine feces from this same layer. The interesting thing about the feces is that they seem to show that these people ate mainly agricultural plants. Eight out of nine feces have agricultural remains in them, four have more than one agricultural plant in them, and the other four have a single type of plant in them. One feces was found that had only wild plant remains. Three of the nine with agricultural remains had either wild plants and/or bone. Thus our estimate from the feces remains would somewhat reverse our estimate of the subsistence pattern of these people; it would seem to indicate that perhaps 50 per cent of their food came from agriculture and 25 per cent from hunting and food gathering. Probably the actual truth of the matter is that, the two sets of data from the feces and the garbage remains should be averaged; I think this would probably give us a fairly accurate estimate. It is with this horizon that we found our first manos and metates. These, of course, are definite implements used for grinding up agricultural remains, particularly corn kernels.

Beside tools and remains giving us evidence of subsistence activities we have other tools that give us glimpses of some other things

they did. The few scrapers would seem to show that the scraping of skins was not an important activity. We have no wood-working tools, but a number of the wooden tools are partially finished or were finished and then broken. Thus these people probably did some wood-working. There is some evidence that the making of chipped stone artifacts was still important at this time. We have a single antler flaker and a number of chips in the refuse, and we also have a new type of tool: an obsidian blade. This obsidian blade would seem to indicate that there had been a major shift in their tool-making techniques and that they were making cylindrical polyhedral cores out of obsidian and then striking off the blades from these cores. Again, one of the most important activities was weaving. We have two implements that can be connected with this, one is a pointed wooden stick that may have been used in making baskets and mats, while the other is a clay disk. This latter may very well be part of a spindle whorl for making string. String made on a spindle whorl is of a single cotton yarn which was Z-twisted. There also were strings made of two S-twisted soft yarns and some of these in turn are made into two-cord rope. There is also Z-twisted hard yarn made into 2-yarn cord, two-cord rope, and three-cord rope, as well as two S-twisted soft or hard yarn cords and some S-twisted yarn made into three-yarn cord rope. Both these strings as well as yucca fibres have been tied into a number of different knots, and granny knots. Some of this cord has also been made into nets of two different types: a simple laced net and a simple loop net. One fragment of these nets as well as a piece of woven cloth served as a sort of kilt. Other string, mainly the cotton string had been woven on a simple belt loom. Much of it was plain one-over-one-type weave, but there was some two-over-two-type weave. Also woven during this time period are a number of mats. Most of them were twilled and had square corners.

We also found a large chequer-woven mat with a square corner. These twilled mats usually had a one-over-one type selvage. This type of selvage gave the mats the appearance of having a distinctive rim around them. Beside mats there were a number of baskets that had been made both in the form of bottles, bowls and pans. All of these were the split-stitch bundle foundation variety and a number of them had been decorated by weaving stitches of a different colour into them. Small pointed sticks may have been tools used in weaving and the paint stone may have been used for mixing paint dying the stitches. The ceramics were mainly brown and black wares and are very similar to the ones found in the previous layer and were made - I believe - in the same way. One difference is that one of the sherds of black ware has incising in its interior of its flat bottom. There are more sherds of the brushed and plain variety that there was in the previous horizons.

Another distinctive aspect of this layer was its one burial. The body, which had in its pubic area a mass of roots that may have been tied in place by a piece of string around the waist, had first been placed in a tightly flexed position. It had been laid on its back in two large rectangular mats. Then these mats had been folded over the head and feet and overlapped in the stomach region. On top of this overlap was placed a small mat. Next, the sides of all mats were folded over the ^{and} were folded over the whole mass tied by a series of length of strings. Many of these strings had been tied together to make longer pieces of rope. They were bound up in much the same manner as in the child burial of Zone I. Probably, while the bundling occurred, a shallow cylindrical hole had been dug and was lined with grass. The burial bundle was then placed in a sitting position in the grass-lined pit and covered with palm leaves and prickly pear leaves. Next, a large rectangular mat was placed

over the leaves, the bundle and the top of the pit. On top of the mat near the burial's feet were placed two large bowl shaped baskets. Just off the mat, near the head in the top of the pit, were placed two water bottles which were inside a net bag. Finally, the pit was filled with refuse and this refuse contained corn cobs. Whether this inclusion was by accident or design, we do not know.

In terms of cultural affiliation this component, Occupation 10, is the type component for the Mesq de Guaje phase. There are a number of interesting resemblances. As had been previously stated, many of the weaving techniques and agricultural remains as well as the projectile points seem to be directly derived from the Guerra horizon. The pottery is something new. Much of the black pottery does have a resemblance to that of the Huasteca, and I cannot help but think that our Mesq black pottery is just a regional variant of Ponce black of the Tampico-Panuco region in the Huasteca. Thus, I think that our dates for this horizon probably are also a date for the Ponce horizon.

Fig. - Extent of Zone F, Occupation 11, in the excavated area of Romero's Cave.

Zone F was a thick brownish layer streaked with charcoal in the front of the cave that lay directly on the charcoal Zone G, Occupation 10.

Zone F contained what we are calling Occupation 11. As we shall see, this more correctly should be called Occupations 11. This layer at about the S 15 profile, after being fairly thick in the outer portion of the cave, slopes suddenly upward and became noticeably thinner. It also lost its streaky appearance and became very filled with vegetable material. Also at about this point it became separated from the lower Occupation 10 by a cave dust layer which we are calling Zone G-1. This layer like the one underneath it, ran from the front of the back to the back of the cave and was one of the ones which was fairly easy to discern and also fairly easy to number as to level.

Pollen analyses of some of the material from this zone reveal that it was deposited during a period which was slightly wetter than it is at present. Carbon and vegetable material have been analyzed by Carbon 14 and have revealed a date of 236 A.D. \pm -(M---). The layer itself thinned in almost all of our excavated portions and probably was in most of the unexcavated portions. We have estimated that it contained about 500 cubic feet of refuse. Extending down from this layer were two fire pits, one of which, No. 14, had a large number of burned corn cobs in it. There also was a storage pit, Pit 15, and this contained a great amount of vegetable material and then down in the bottom an aligator bag which contained some teocentli seeds. Besides these pits extending down from this layer, there were five burial pits. Many of these seem to have been dug at just a slightly different time one from the other.

Now let us consider just what sort of an occupation this was. This situation seems to have been somewhat more complex than in our previous levels. I have a feeling that this so-called Occupation 11 represents a series of brief intermittant occupations and ceremonies by ~~a~~ small groups ^{over} of a relatively long period, and that the real homes

[illegible]

of the occupants were in the ruins on the ^mMesa above the cave. There are a number of reasons for my believing that this is not one continuous occupation by a macro band, which it on the surface appears to be. First of all, we have the thin lensings of charcoal in the outer part of the zone toward the mouth of the cave. This would probably represent a series of very small brief occupations which happened to become separated by cave dust. In the back they don't seem to have been separated. Secondly, the burials were deposited at a different time. Burial 3 is very definitely on top of burial 4. These were both dug down from the lower part of the zone. Also, Burial 9 was on top of Burial 8, and Burial 9 seemed to have actually been dug in part through the original burial pit of Burial 8. Burial 7 also seems to come from almost above the top of the stratum. Thus each one of these burials seems to have been made at a slightly different time. Also, the burials all but one, are in pack-boards with tumplines and the main ceremony in the wrapping of these burials seems to have taken place outside the cave and brought in; in other words, these are not inhabitants of the cave who died during the occupation, but rather people who lived outside the cave and then died and were brought in to this special burial place. Another factor which makes me believe that this is an intermittent occupation is that we have vegetable materials that seem to represent all periods of the year. Certainly the thickness of the strata in the back of the cave does not justify the belief that it was a continuous occupation throughout the whole year. Thirdly, as we shall see, this occupational level, ^(more correctly levels) is a component of the Palmillas culture, and outside the cave the Palmillas culture built most of the large ruins in the area that had large amounts of pottery. In our cave deposits we found a very limited amount of pottery. Thus it is hard

for me to believe that the abundant ceramics these Palmillas people used outside the cave was little used inside this cave. Thirdly, nowhere in this deposit was anything we could honestly call grass bedding. Thus again it looks like this occupation was laid down by a series of visits from the people who were living at the ruins above the cave.

Now let us turn to evidence of their subsistence activities. Here we have a very, very adequate sample both of preserved materials as well as a number of portions of feces. Unfortunately, only three of these have been analyzed. There were 116 bones and some fragments of skin. Animals which these people hunted included deer, peccary, jaguar, evidently an aligator, and some birds. Implements that might be connected with the hunt are relatively numerous. They include Catan, Matamores, San Lorenzo, and Verde arrow points. There also were a number of arrows, foreshafts and mainshafts found in the refuse. Palmillas, corner-notched, Nogales, Tortugas and Abasolo dart points occur along with a wooden atlatl blunt, atlatl foreshafts and mainshafts. Dart remains are still more numerous than those connected with arrow. Other tools that could have been used in preparing things killed in the chase are various scrapers and choppers as well as a skin flesher and awl. Thus it would seem these people did some hunting. However, their hunting was nowhere near as important as their plant collecting activities. In the layer we have 3,264 plant remains. Most of these are huapillas, opuntia and agave. However, there are wild squash seeds, some fragments of manihot, amaranths, panicum, tripsicum, as well as many other eatable wild plants. Implements that could have been used in preparing these wild plants for a palatable dish were mortars and pestles. These plants also may have been collected and brought into the cave in baskets and

net bags. However, more important than the food plants are the agricultural plants. Here we have a large variety. These include gourd remains, cucurbita mixta, cucurbita moschata, and cucurbita pepo. In the latter, the pumpkin, there seem to be a number of varieties. There also are many corn cobs, over 2,000 in this layer, and again we seem to have a number of different races of corn. Besides the corn we have a number of grains of teocentli. Some of these teocentli grains were set aside especially in an aligator bag in Pit 15. Beans are fairly numerous and include a black, yellow, and red-seeded variety. There also are a couple of pods of what might be lima beans. In the feces we found fragments of chili peppers and sun flowers. Also we found in the garbage fragments of molcajete bowls in which the chili and sunflower seeds may have been ground. Also, there was a rectangular and cylindrical mano and fragments of metates, which of course, could have been used in preparing some of the other food and of course the ollas and bowls may have been used to cook these foods in. Besides these edible domesticated plants we have pipes and cigarette fragments and fragments of tobacco. Also, a fair number of fragments of cotton string was found throughout the refuse and burials. A clay disk may have been part of a spindle whorl which took the original cotton fibre and wound them into string. There also are some cotton seeds on this level and in the feces. They may have eaten cotton seeds probably to get the grease out of them. In terms of the preserved food stuff it would seem that we are dealing with a horizon that got their subsistence from a 50 per cent wild plant, 45 per cent agricultural remains and 5 per cent hunting. The three feces analyzed, however, reveal a rather different picture. Here all three are full of agricultural materials and all of them have more than two agricultural kinds of plants in them. Two

out of the three have some wild plant remains, while two out of the three have some evidence of game (either bone or feathers or skin). Thus the feces would reveal that probably 60 per cent of their food came from agriculture and 20 per cent from food gathering, and 20 per cent from hunting. Again I suspect that an average of the wild preserved remains and the estimate based on the feces probably would give us a fairly accurate picture.

From the garbage and the material associated with the burials we get a fair glimpse of other activities besides subsistence. It not only tells how they lived in the cave but also probably tells what their activities were in the ruins above the cave, since we believe that these occupations were only brief visits from these ruins. There is some evidence that they were making projectile points possibly in the cave. The bone flaker, the chips, the numerous projectile points all indicate this. Also, the numerous blades and the small fragment of what might be a polyhedral core hint at this activity. Again we have a large number of choppers and scrapers. Some of them are made from limestone which may very well have come from the walls of the cave itself. Thus, perhaps some of their casual activities when they visited the cave was to sit here in this cool place and make chipped stone implements. Another activity was probably their making of various wooden tools. A number of the atlatl foreshafts are unfinished and a fair number of whittled and cut sticks occurred throughout the refuse. There also is a fragment of a stone bark beater that could have been used for wood (or bark) work. Besides this there are a fair number of celts which could have been used for cutting up larger sticks, though I would suspect that the use of celts was probably adapted to outside conditions to either cut

down the bush for corn fields or to cut up poles for building houses in their village of ceremonial center. This brings us to another tool making activity, that is the grinding of stones. The celts, the manos, metates and the pestles all are ground of stones. This is an entirely new activity which we have not met before. Other activities which may have not taken place in the cave but certainly were done by the Palmillas people was the working of leather. The scrapers, the awl, the flesher and the antler piercer, all occurred in the garbage and hint that some leather working was done in the cave. The fragment of an alligator bag, some leather thongs, a jaguar skin belt, two or three fragments of deer skin, and a fragment of a sandal, that is huarachi, all are objects of leather that has been manufactured.

However, a very important activity for these people probably both in the cave as well as in the ruins was weaving. There are a large number of yucca strands which have been stripped into sections and many of them bear knots. This, of course, would be a primitive kind of string. However, there is in abundance a wide variety of different kinds of string with different numbers of yarn and different kinds of fibres used. This is mainly hand-made. There however are definite cotton threads that were made on a spindle whorl. Besides the actual twisting the yarn to make strings, a number of fibres were braided together to make strings, a new technique for making string. The uses of string, of course, are infinite. Many of them were used for tying Hangman's knots, slip knots, granny knots, overhand knots, square knots, and sheephead and larkshead knots. A number of strings that were used for tying was for making carrying loops, and other strings were used for tumplines. Some of the strings, of course, were used for making nets. We have a couple of pointed sticks

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that could have been used to weave their simple loop nets. Some of these nets were bags, and one of them actually was used like a piece of cloth. The pointed stick also could have been used for making baskets. A few of the baskets are twilled mats that had been folded in half and then sewn at one edge. These, of course, became square baskets. Most of the other basket remains are of the split-stitch bundle foundation variety and are mainly bowls. Another carrying type basket is what we are calling packboards. Here they are first made of two hoops of sticks tying them together; next a large net has been sewn and tied to each of these hoops, thus making two more or less dip net devices; next the two hoops with the net inside were hinged together by loose strips of yucca, thus making two hoops with net covers that fold together. These could be used as baskets. Most of these hoops, all of which were found associated with burials, have a tumpline from one side to the other at right angles to the hinge section. As may be seen from the Codex Maya Tlotzin, this type of packboard with a tumpline was a common implement among the Otomi and the Chicamecs north of the Huasteca. It seems to begin to be used in Tamaulipas by at least 300 A.D. However, the most impressive weaving objects are the numerous mats. The basic technique in weaving all these mats is twilling. Many of these mats, particularly those associated with the burial, are between three and four feet wide, and four and six feet long. In this twilling process they have learned the technique of skipping and multiplying weave to change the slope of the twill and thereby making a line. The line in turn could term a series of geometric squares in the mats. Many of these mats have a very ornate design. The older type of mats with special corners are also continued to be used, but the decorated twilled variety are more common. There also is one mat which was some sort

of a head-dress. This mat is roughly in the form of a short-stemmed T and was over the head of one of the burials. The best weaving was done on some sort of a belt loom using cotton yarn. Two kinds of weaving seems to have been done, one plain weaving - that is one-over-one - and two-over-two twilled weaving. I expect that the weaving of cotton was a fairly important industry. Another activity which I don't think was done in the cave, but certainly was done by these people since we have the result in the cave, was the making of pottery. Though we did not get a great number of sherds in the refuse, we did get some. The pottery has a will-knit paste, is coil-made, has small amounts of fine temper, and seems to be for the most part fired in a special kiln. The simpler wares have plain or brushed surfaces; but there are some fragments of very nice pots of either red, black or plain polished or slipped surfaces. We have little evidence of decoration but there are a few sherds that have engraving cut through their outer polished and slipped surfaces. Three or four sherds seem to come from Molcajets and had geometric incising on their interiors. Even with our limited sample of sherds it was easy to see that these people were making a variety of vessel forms. We have fragments of water jars, plates, bowls with or without slab feet, and jars with or without handles as well as effigy jars, often shaped in a human or animal head. There also are a whole series of clay pipe fragments, most of them seem to have been of the platform variety and relatively small. These were also hand-modelled and made of an extremely fine paste clay. There is one fragment of ^a mold-made figurine, showing that they had still another technique of manufacturing pottery.

This mold-made figurine plus material with the burials and the refuse give us some hint as to what their wearing apparel was. Around

their waist they seem to have had kilts which were open at the front, in other words, a rectangular piece of cloth wrapped around the waist like a towel with the opening in the front. Holding up this kilt were belts. One of our belts is of threaded beans and bird-bone beads while another is a piece of jaguar skin. Some of our leather thongs, yucca strands and so-called woven tumpline also may have been belts. This kilt was open in the pubic region and on two of the burials we have a sort of fringe of root fibres that hung down from the belt over the opening in the pubic region. Some of the figurines from the ruins of the same culture seem to display a similar wearing apparel. We have a number of bird bones and shell beads and a fragment of a gorget with our burials. Their use may be seen on the figurines where there are obvious necklaces, medallions and bracelets. Also, the figurines have ear plugs which we did not find in any of the cave remains but certainly some of the people might have worn such. Many of the figurines also are bare-footed but a few of them have some sort of a sandal, and our single fragment of our huarache may have been the sort of wearing apparel depicted in the figurines. One additional fragment of wearing apparel is the T-shaped twilled cap found on one of the heads of one of the burials. The stems of the head of the T (or its horizontal parts)^{went}/down from the head past the ears ^{was}and/draped over the chest, while the base of the T seems to have been quite wide and ran across the top of the head. Some of the figurines also show some sort of more inverted conical type caps, and some have turbans. We found no evidence of this in our cave remains.

The final activity in the cave was the burying of the dead. As I have stated before, they were buried in at least three different times, and maybe all five of the burials were buried at five different

times. Also, one of the treasure hunters' holes had in its back shelf a fragment of a packboard and a piece of net. Thus I suspect that probably another burial occurred in this layer. The skeletons that Romero analyzed from this cave, may have been this burial. All but one of these burials have some features in common. All are in pits and under large slabs of rock. Four (and probably the fifth that had been looted) were in packboards with a tumpline. These five burials seem to have been flexed and then wrapped in a series of mats which were tied by strong rope and/or yucca strands. One, however, seems to have some individual features. The looted one and Burial 8 had no accompanying remains and also were in rather poor condition. Burial 9 had a fragment of a water bottle and wound stick in the pubic area in it. Burial 7 had a cotton cloth kilt, some pubic fibres, string and an awl, a pubic fringe, a net kilt, a threaded bean and bird-bone belt, a gorget, and a T-shaped mat head dress. The other burial, No. 3, was rather different. It was in a pit, overlapping over Burial 4, and it was poorly preserved. It had been covered by a large mat; it was in a flexed position, but the head was missing. There was a large amount of pubic fibres and string around the pubic area, perhaps showing that it too had a kilt. In place of the head were a mass of fibres. Sticking in the ribs was an arrow and there were a number of other arrow shafts in the same pit that may have pierced the body. This certainly looks to have been some sort of a human sacrifice. As has been stated before, in the Aztec codices there are drawings of Otomi burials. The drawings show bodies wrapped in twilled mats in packboard, buried in caves in much the same manner that we found in this Palmillas component.

In terms of cultural affiliation it is obvious that at this occupation level we have a very new and different group as there are

many examples of new types of artifacts. The Palmillas corner-notched points, the Verde points, the arrows, the clay platform pipe, the complexly woven mats, the packboards and packboard burials, the wide variety of agricultural plants are distinctive aspects of this component of the Palmillas phase. Scrapers, some of the simpler weaving techniques and many of the string types as well as the atlatl types and various of the Abasolo, Nogales, and Tortugas projectile points show continuity from the earlier level. The amount of rather specialized material would seem to hint that for the first time at this occupation level we have a culture which may have had some sort of full-time specialists and probably markets as a number of implements seem to have been traded in, from considerable distances. Thus we have an urban or semi-urban culture, represented at this time period about 300 - 700 A.D.

Directly above this layer in both the front and the back of the cave we have a white ash and cave dust layer which is Zone F-1. It does not seem to have been an occupation layer, though we found occasional points and occasional pot sherds in it. Above this layer we have a burnt charcoal stratum.

This charcoal stratum, Zone E, Occupation 12, was mainly in the front of the cave and was composed of only about 40 cubic feet of refuse, most of which was darkened ash. However, Pit 16, which extended down from it, was filled with vegetable material and was grass-lined as if it was a bed. Also, Pit 3 was mainly a large hearth area filled with a great deal of charcoal and burnt rock. It did have some burnt vegetable material in it. Due to the small size of the occupation area plus its limited thickness I would guess that it was occupied by a micro band for a very short season and the squash remains would again indicate that this season was either part of the late spring or part of the early summer.

Now turning to the remains that tell us something about their subsistence activities we first had 110 badly charred bone fragments, which were not identifiable. We also had two rather large bones, both of which were uncharred and seemed to have come from a deer. Implements connected with the chase are almost as numerous as the bone material as far as bulk is concerned. In this refuse were Verde, Abasolo, Tortugas, Matamores and Catan points, all of which may have been used with atlatls. Also occurring were San Lorenzo arrow points and part of an arrow fore-shaft. A discoidal scraper and a cane knife as well as thin flake scrapers may have been used in preparing the skins of animals killed in the chase. Much more numerous than the bone remains were the wild plant remains which number 1,436. These include agave, opuntia and wild squash. The chopper, the scraping planes and the mullers, all may have been used in preparing these very numerous remains. Almost as important as the wild vegetable materials were the remains of agriculture. There were over 1,000 corn cobs, many of which came from Pit 16, there are pods and seeds of four varieties of beans, there are warty squash and pumpkin remains, there are some clay pipes, cane cigarettes and a possible tobacco leaf. There were in the feces a couple of pepper seeds. There was also much of a string that was

made of cotton. The only other activity that there is any indication of is the numerous fragments of string and pottery remains here. Though we had about 150 sherds, many of them were quite small; however, beside brushed and plain sherds we did have some polished red and polished black that had engraved designs cut through them. Thus our ceramic complex is very much like that of Occupation 11. On the basis of the ceramics and the points and the vegetable material, I think we are safe to conclude that this was a temporary occupation, perhaps during a corn harvesting season, by a micro band of people who had the Palmillas type of culture.

Fig. - Extent of Zone D, Occupation 13, in the excavated area of Romero's Cave.

Above these levels of relatively poorly preserved vegetable material which were filled with ash and charcoal occurred a big thick layer of well-preserved food stuff from the front of the cave to the back of the cave. In the front of the cave this layer is often one foot thick, while in the back it may be only three or four inches. This lowest well-preserved vegetable layer is called Zone D, Occupation 13. It has been estimated to include about 618 cubic feet of preserved refuse material. The pollen from this layer as well as the bone material and the preserved vegetable

stuff indicate that we are again dealing with a period that was as dry as it is at present. In two or three little patches, within this well-preserved vegetable layer, were burned areas with fire-cracked rock which might be interpreted as being hearth areas. However, besides these possible hearth areas there were six very definite pits. Two of these pits were completely lined with grass, perhaps for beds. Two of the other ones, which were also vegetable lined, contained sleeping mats. Thus I think we can safely say that there were four beds within the area. Another pit was filled almost entirely with corn cobs while a final pit was filled with vegetable materials. Much of the food stuffs look like they have been put in there quite purposely and a number of wooden artifacts were with them. From the basis of this thick vegetable material as well as the kinds of plant remains that we found in it, I think we may safely estimate that a macro band lay down this layer in a seasonal occupation. The squash remains and some of the plant remains would seem to indicate that they occupied this layer and deposited it during the spring and summer months.

141 bones occurred in this stratum and there were a number of identifiable bones, some of these are deer, a few of peccary, a couple are of rats; there is one bone that is very definitely a buffalo, and one tooth that might be of a dog. Actually, this does not represent a great deal of meat. However, the implements associated with the hunt and with the preparation of meat are very numerous. These include both thick and thin scrapers as well as elongate scrapers. The discoidal scrapers and small triangular end scrapers that were probably hafted in some sort of cylindrical sticks; all of these could have been used to prepare hides as well as fix meat. Projectile points were quite numerous and include atlatl points of the types called Abasolo, Nogales, Tortugas, Palmillas, Verde, Matamores and Catan. There are a couple of fragments of atlatl foreshafts

about 1000 ft. and we are again dealing with a point that was as high as
it is at present. In the of this little patch, which is well-
served by a layer, many bones were found which were
as indicated by being found there. However, besides these fossils
which were there were also very delicate ones. Two of these were
completely lined with green, perhaps for bone. Two of the other ones, which
were also vegetable like, contained rounded seeds. Then I think we can
safely say that there were four beds within the area. Another bit was
filled almost entirely with bone while a final bit was filled with
vegetable material. Each of the four beds look like they have been
put in there quite purposely and a number of wooden articles were with
them. From the state of this which vegetable material as well as the kinds
of plant remains that we found in it, I think we may safely estimate that
a heavy bed lay down this layer in a somewhat irregular. The species
remains and some of the plant remains would seem to indicate that they
occupied this layer and deposited it during the spring and summer months.
All bones occurred in this stratum and there were a number of large
typical bones, some of these are deer, a few of horses, a couple are of
birds; there is one bone that is very distinctly a turtle, and one looks
that might be of a dog. Actually, this does not represent a great deal of
meat. However, the fragments associated with the meat and with the
preparation of meat are very numerous. These include bone chips and thin
shavings as well as animal remains. The animal remains are small
fragments and perhaps they were slightly buried in some sort of
unidentified material all of these would have been used as fuel and as
well as the meat. Presumably points were used for weapons and similar things
points of the type of the flint, the bones, the bones, the bones,
the bones and the bones. There are a couple of fragments of small fragments

and a few possible fragments of mainshafts. However, at this time, much more numerous than the atlatl remains are points and mainshafts of arrows. The points belong to the Jaumave, Frenos, and San Lorenzo types. Also, there are at least two pieces of small spring traps. However, as said before, most of the layer was composed of vegetable material and we counted and classified 7,709 vegetable remains. This probably represents about two-thirds of all that occur. Among these remains are the opuntia, cactus, agave and huapillas. There were some remains of wild squash, wild runner beans, and amaranth. Tools which might have been used in preparing these plants were scraper planes and various saw-like choppers. Again, we have a variety of agricultural remains but not so great as in the previous horizons. There are gourds, pumpkins, warty squash and remains of the small walnut squash. There are at least three kinds of beans as well as lima beans, two or three varieties of corn, and teocentli. Though we found no actual tobacco leaves, an effigy pipe and various cigarette butts would seem to indicate that such were used. Cotton occurred but was extremely rare. In terms of the garbage remains they would seem to have been primarily plant collectors who did quite a bit of agriculture and little or no hunting. The two feces examined would tend to back this up. Both of these had as many more fragments of wild plants in them than they had of agricultural plants, and only one of them had a small piece of crushed bone. Other activities besides subsistence show that they did some chipping of flint and still made obsidian blades from polyhedral cores. The antler flaker may have been one of the tools they used in chipping a flint. The scraping of skins seemed to have been an important industry as we have fragments of sandals and some deer skins; we also have some split conical wedges and plain wedges that may have been used to tie down the skin while it was being scraped by discoidal and triangular end scrapers.

Like the previous horizons, weaving is an important industry. There were a large number of fragments of string but the string is somewhat different from that of the previous horizons as for most of it is S-twisted hand-made yarn, and there is very little spindle whorl made cotton yarn. The yarns were twisted in various ways to make different kinds of cord. Again in this horizon we seem to have a wide variety of knots both tied on string and strands of the yucca. While some of this string was used for tying, most of the strings were used to make knotless and simple-looped nets as well as a simple-loop net with a rod foundation. There is one fragment of a plain cotton-woven cloth that was made on a belt loom with one wurt and one weft. Mat fragments are fairly numerous and there are a couple of whole mats. Most of them came out of our sleeping pits. All of these are twilled but they are extremely different from those of our previous horizons in that the fancy decorations made by skipping elements while twilling are almost entirely absent. The small pointed wooden stick may have been used in weaving these implements. They also may have been used in making their split-stitch bowl-shaped baskets. These bowls again are not so well made nor so tightly woven as either those of the Palmillas or Mesa de Guaje horizons. One piece of turtle shell had been pierced and may have served as a rattle. The most numerous cultural items from this horizon was the pottery. Though there is some pottery that seems to carry on from previous horizons, most of it is of new and of different types. This pottery like that of the previous horizons is coil-made, but the paste is more poorly knit and the temper is larger. It also has been fired in relatively poorly controlled oxydizing atmosphere. The predominant surface finishes are brushed and crudely smoothed. However, there are some surfaces that are smudged black and a few that are corrugated. Rarely are there any decorations on them, though one type has crude engraving on it. The vessel forms seem to be limited to relatively simple bowls without

vessel feet and wide-mouth jars without handles. The general appearance of the pottery give the impression that we are now dealing almost entirely with service utilitarian ware and have no ceremonial ware or fine specialized ware.

In terms of cultural relations Zone D, Occupation 13 is our first component of the San Lorenzo phase. This phase differs from previous ones in having a number of small side-notched and triangular arrow points, many more arrows than atlatls, in having the crude San Lorenzo type corrugated and black ware and crudely engraved pottery. They also had simple twined mats only. There are various types of scalloped edged leather sandals. There are, of course, many hold-overs from the previous horizons both in projectile points and scraper types as well as the more general string types and some of the wooden tools. However, we have a very different horizon from Palmillas and what evidence we saw of specialized craftsmanship or possibly full-time specialists in the Palmillas horizons seems to be totally lost by San Lorenzo times.

Fig. - Extent of Zone, Occupation 14, in the excavated area of Romero's Cave.

Usually capping the vegetable layer Zone D was a very thin, half an

These two are also-called just about identical. The former is identical
the latter give the impression that as the new feeling about morality
also certain activities were not have an emotional basis or form
specified here.

In terms of cultural relations John D. Thompson is not far
removed from the old-fashioned view. This is the old-fashioned
view in having a number of small differences and similarities between points,
and more stress on relative, in having the same old-fashioned view
concerned and then with the only difference being that they also are
single points with each other. These are points which are similar about
points which. There are, of course, very little-known from the previous
system that in particular points are somewhat different as well as the same
points which types and some of the known facts. However, we have a
very different picture from previous and old evidence as can be
seen from the comparison of the two points which are similar in the
previous picture seems to be totally lost in the previous picture.

John D. Thompson is not far removed from the old-fashioned view.
This is the old-fashioned view.

These two are also-called just about identical. The former is identical
the latter give the impression that as the new feeling about morality
also certain activities were not have an emotional basis or form
specified here.

inch thick ash layer, called Zone D-1. This underlay another relatively thick vegetable layer which was in the middle part of our excavated area. This vegetable layer that looked so very much like Zone D was called Zone C and Occupation 14. It was somewhat less extensive than our previous one and only was composed of 265 cubic feet of refuse. Its features were not too numerous. There was one pit filled with fire-cracked rock and charcoal, one grass-lined pit or bed, a grass lined pit or bed, a grass-lined pit with a mat inside that definitely was a bed, and there was a large depression in the west part of our excavation that was filled with grass and seems to have been part of this layer. The latter may have in part been caused by some of the treasure hunting excavation. In terms of the thickness of the layer and fireplace, and so forth, I would guess we are probably dealing with a macro band who was here for about a season.

During their stay in this season they did a little hunting. We found 119 unidentifiable bones. We found a few identifiable deer bones, a couple of jaguar bones, rat bones, and some bird bones. There also was a fragment of deer skin and jaguar skin. Implements that might be connected with the hunt were fairly numerous. Dart points include Abasolo, Nogales, Palmillas, Verde, Catan and Matamores types. More numerous than these were arrow points which include San Lorenzo, Jaumave, Fresno and Starr. There also are a large number of arrow main shafts and foreshafts. Wild plants are extremely numerous and here we counted all of them; the stratum had 7,274 wild plant remains. Among these wild plant remains are some fragments of wild squash, runner beans, amaranth as well as numerous desert plants like cactus and agave, huapillas and the like. Some of our choppers and hammers may have been used to mash up these wild food remains. Almost as numerous as the wild plant remains are agricultural remains. However,

there is one difference. Though we have quite a wide variety, the numerous different varieties or races of domesticated plants which we had in Palmillas seem to be gone. We still have gourds and a couple of varieties of pumpkins as well as warty squash. There are still four varieties of beans, but the lima beans are absent. There are a large number of cobs of corn, but most of them seem to be of a race called Breve de Pidlla. Cotton again occurs in some of the string and there are a few little fragments of peppers. No tobacco leaves were found but we have some cigarette butts and part of an effigy of an elbow clay pipe. I think the conclusion that these people were plant collectors who did almost as much agriculture as they did plant collecting and a little hunting, is a fair estimate of their subsistence activities.

The antler flaker and the chips would seem to indicate that these people did some chipping while they were living in the cave. A conical wedge for holding down skin, the scrapers, the ulna punch, the jaguar skin, and the shoe fragment would seem to show that one of their activities while in the cave was preparing hides. The spoke shaver, the pointed stick and various whittled objects seem to show that they did some wood working. Examples of string are not overly numerous. Most of it is S-twisted and done by hand and not by a spindle whorl. This is true of both cotton and hard or soft wild fibres. There are, however, a few pieces of cotton yarn that were done with a spindle whorl. Some of the string was made into simple loop nets, others were woven on a belt loom into cotton plain weave. No basket remains were found but there were two fragments of twilled mats, and one extremely small fragment of chequer-weave mat. One of the twilled mats seems to have a decorated border. However, for the most part they are plain. There also were found a few painted fibres in this layer that may be interpreted as indicating that we had some

twilled mats that had a painted design on them.

As far as cultural affinities are concerned this group definitely ties in with Occupation 13. It is considered to be another, perhaps smaller, component of the San Lorenzo phase. The numerous pot sherds, which are mainly brushed and smudged ware, although there are some corrugated and engraved sherds, are a further link. This ceramic activity is probably our best reason for tying them in with the previous culture.

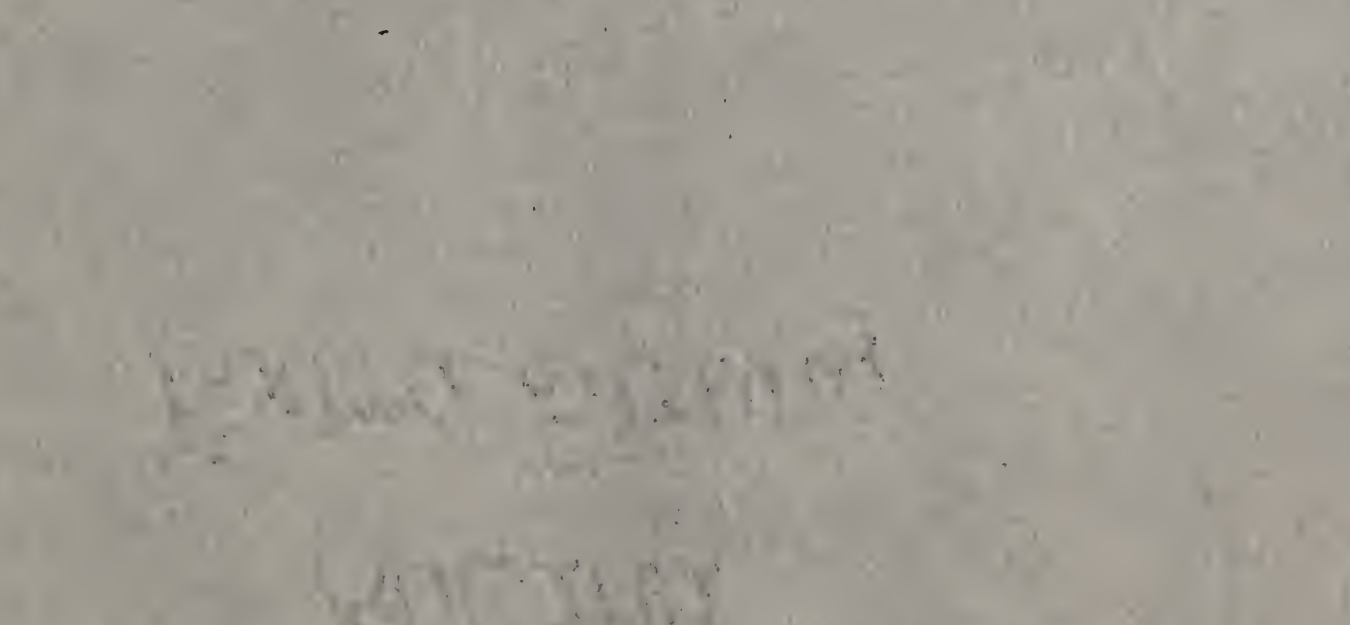


Fig. - Extent of Zone E, Occupation 15 of the excavated area of Romero's Cave.

Over all the cave dust layer called D-1 and in part above Zone C, was another thin layer of vegetable material in the back of the cave. This seems to have extended in fairly large amounts into the unexcavated portion. However, as far as our excavation is concerned, there was little more than 25 cubic feet of refuse in this layer. Extending down from this layer was one grass-lined pit with a mat in it, and throughout the layer were patches of charcoal that may or may not have been hearths. On the basis of the thinness of the layer and the relatively small occupation, I would guess that this is an occupation by a nomadic micro-

collected from this and a similar deposit on shore.

As far as material identified was concerned this group definitely
lies in with Group 12. It is considered to be mostly, perhaps
entirely, composed of the same material. The numerous pot shards,
which are mainly beveled and fluted ware, although there are some
decorated and engraved shards, are a further link. This material
activity is probably one of the best reason for giving it with the previous
category.

Fig. 1 - Plan of Zone A, Group 12 of the
excavated site of Pompeii, Italy.

Over all the area was laid out in a grid system 0-100 feet square.
The first layer of excavation was made in the form of the grid.
This was done in such a way as to give a fairly large amount of the excavated
material. However, as far as the excavation is concerned, there was
little more than 25 feet of depth in the first layer. According to the
plan the layer was one foot thick and was 10 feet wide. The excavated
the layer was 10 feet wide and 10 feet deep. The excavated
On the basis of the plan of the layer and the relatively small
excavation, I would guess that this is an excavation of a small area.

band. The squash remains would seem to indicate that perhaps it took place during the summer.

We have considerable evidence concerning their subsistence activities. Only twenty-five unidentifiable animal bones were uncovered and there was one identifiable deer bone flaker and a piece of deer skin. Artifacts that might be connected with the chase were the atlatl point of the Abasolo, Nogales, Mesa and Verde's types. However, much more numerous than atlatl points were the Catan, Matamores, Fresno, Starr and San Antonio side-notched arrow points. There also were numerous main-shafts, foreshafts. Much more numerous than the evidence of hunting was that of wild plant collecting. 2,842 wild plant remains were uncovered. Many of these were Huapillas leaves and stems. There were a few agave, cactus and chewed quits of other wild plants as well as a few wild squash seeds. The only implement that seems to be connected with wild plant collecting (except for the obvious nets) were thick and thin saw-like choppers. Agricultural remains also occur but are less varied and less numerous than in our previous horizons. There are only two varieties of beans; there are a number of cobs of corn but most of them seem to be of the Breve de Padilla race corn. There are a few strings made from cotton. Tobacco also occurs. The gourd fragments are fairly numerous but this does not seem to have been a food as we found none of these seeds in the feces. A single variety of pumpkin and warty squash also occurred. The only objects that might even vaguely be connected with agricultural remains are the pottery, particularly the ones that had burned food material adhering to their interiors. We also have a shell spoon that may have been used for dipping out some of this soup. Skin scraping activities evidently occurred during this brief occupation. The hammered wood wedge may have been used to stake down

skins, the thick and thin flake side scrapers as well as the crescentric end scrapers may have been used for removing some of these fatty tissues. There also are antler piercers that could have been used to pierce the skin. We actually did find a number of fragments of skin, some being leather thongs, others merely pieces of deer skin with or without the hair attached and also one fragment of a huarache. As with the other horizons there are numerous pieces of string; most of it is S-twisted and soft fibres. A little cotton cord still appears. Some of the string and yucca strands were, of course, tied into a variety of knots. Some string was used for making simple loop net while other strings were used on a loom to make tightly twined blankets. There also is one single fragment of a piece of double cloth; it is decorated with an indigo blue dye. This piece of double cloth of course infers a much more complex type of loom. It may, however, be a trade piece, manufactured in another area. Simple twilled mats occur with squared corners on them and there is one chequer mat. There is also a fragment of paint dish which may have been used colouring fibres for decorating mats. Pot sherds are fairly numerous. The fancier variety of engraved or black burnished ware, and the earlier brown burnished ware seemed to have totally disappeared, though brush and corrugated wares continue. However, there are two new types: San Antonio red ware and San Antonio polished ware. Vessel forms like in the previous horizons are quite limited to a few simple bowls and a few simple water jars without any appendages or decoration. There are also a number of sherds which are trade of Huateca black and white. On the basis of the above evidence it would appear that we have a new culture entering the area, so we consider Occupation 15 to be a component of the San Antonio phase. The San Antonio projectile points, the crescentric end scrapers, the shell spoon, the twined rope, the double cloth, the San Antonio red and polished pottery all are diagnostic

[illegible]

of this new culture. Other traits in the form of choppers and strings seem to be a continuation of the previous horizons.

Fig. - Extent of Zone A, Occupation 16 in the excavated area of Romero's Cave.

Overlying the thin layer of cave dust in the front of the back of the cave, in the back Zone B-1 and in the front Zone C-1 was a thick vegetable layer which underlay cave dust on the surface of the cave. This top vegetable zone is called Zone A and was very extensive. I suspect also that our material could have been dug both by treasure hunters and by the San Antonio people themselves. It is estimated there over 600 cubic feet of refuse in this stratum. There were three fire pits dug down from it, one grass lined pit and one burial pit. There are also numerous areas of patches of grass and a couple of mats lying horizontally in the layer that also may have been beds. On the basis of this I would suspect that here we are dealing with a macro band who occupied this cave for a couple of seasons, perhaps in the spring and the summer. 246 unidentifiable bones occurred as well as identifiable bones of deer, peccary, rats and birds. There were also a number of pieces of skin.

More numerous than the bones themselves were many implements that might be connected with hunting. These include Abasolo, Nogales, Tortugas, Verde, atlatl points as well as atlatl mainshafts, and foreshafts. Still more numerous were Matamores, Catan, San Lorenzo, Jaumave, Fresno and San Antonio arrowpoints. There also was part of a bow and arrow mainshaft and foreshaft. There also were scrapers which would be somehow connected with hunting. Much more important than this activity, however, was wild plant collecting. Though we had 9,361 wild plant remains that were counted, there actually were a number more that were not counted. Most of these were desert cactus and yucca remains, but there were some wild squash fragments with them. The crescental flat and humped scraping planes and saw choppers could have been used to prepare these remains for food. Still an important activity was agriculture. There were many cobs of corn, mostly of the Breve de Padilla variety; there were two kinds of beans, gourds, peppers, warty squash and pumpkin. There also were cigarettes as well as fragments of elbow pipes. Metates and manos also can be connected with agriculture. The feces remains would seem to indicate that about 40 per cent of their activities was agriculture and about 40 per cent wild food collection, and as much as 20 per cent was hunting. This is roughly in agreement with the wild plant Material. However, this is somewhat different than the immediately previous horizons which showed somewhat more plant collecting than agriculture and less hunting. The pots and shell spoons may have been used to prepare this food for eating. Hammer wedges, scraper handles, bone awls and a piercer and an ulna punch, crescentric and scrapers, a scraper handle as well as deer skin, jaguar skin, a belt, a piece of shoe, a thong and a huarache and a leather bag indicate one of the most important activities at this time was the preparing of skins. Equally important was the making of pottery. This pottery like in the San Lorenzo horizon

The first thing I noticed when I stepped out of the car was the smell of the sea. It was a fresh, salty scent that filled the air. I took a deep breath and felt a sense of peace wash over me. The sun was shining brightly, and the waves were crashing against the shore. I walked along the beach, feeling the sand under my feet. The water was so clear, and the fish were so close. I saw a school of dolphins playing in the water. They were jumping and diving, and I knew I was lucky to see them. I stayed on the beach for hours, watching the sunset. The sky was a mix of orange, red, and purple. The stars came out, and the moon was full. It was a beautiful night, and I felt like I was in a dream. I went back to the car, but I couldn't sleep. I was still thinking about the dolphins and the sunset. I decided to go back to the beach. I walked along the shore, and I saw a small boat. It was empty, and I went inside. There was a small table and some chairs. I sat down and looked out at the sea. The waves were still crashing, and the stars were still shining. I felt a sense of calm, and I knew I was in the right place. I stayed there until the sun came up. The morning was bright, and the air was fresh. I walked back to the car, and I felt like I had found a new friend. The dolphins were still playing, and the sunset was still in my mind. I was so happy, and I knew I would come back soon.

and the various other horizons is mainly black ware with some corregative adhering. However, the San Antonio polished and San Antonio red ware indicate that we are dealing with a different horizon. Weaving continues to be important with lots of string occurring and there are a few simple twilled mats with square borders and a few simple twilled mats with square borders and a few simple mats with chequer weave with square corners. Simple loop nets occur. Loom weaving occurs and there were plain weave, double weft and warp woven fabrics.

The Starr and San Antonio points, the crescentric scrapers, the clay pestle, the shell spoon, the plain elbow pipe, the double weft and warp cotton cloth, the reed flute, the distinctive twilled mats as well as the subsistence pattern and San Antonio polished and red pottery indicate that this is a component of the San Antonio phase. Many of the associated artifacts are similar to those of previous horizons, but we were unable to determine whether they are cultural continuities or merely mixing of older artifacts with the new ones they were using.

and the various other sections is mainly black with some decorative
markings. However, the San Antonio polished has an unusual red
indicate that we are dealing with a different horizon. Weaving continues
to be important with lots of string occurring and there are a few simple
beaded necks with narrow borders and a few simple beaded necks with
narrow borders and a few simple necks with narrow borders with square
ornaments. Simple long necks occur. Long weaving occurs and there are
plain necks, double necks and well woven beaded.

The first and San Antonio points, the characteristic ornaments, the
like beaded the shell ornaments, the plain of the neck, the double neck and
well beaded neck, the well known, the characteristic beaded neck as well
as the substance polished and the San Antonio polished and the pottery
indicate that this is a component of the San Antonio phase. Many of the
associated features are similar to those of previous horizons, but we
were unable to determine whether they are cultural continuities or
simply signs of their similarity with the new ones they were made.

SUMMARY

[Chapter 11 Section 1 Bonetto's Inverse
draft]

